LOGIPIX

LOGIPIX IP VIDEO SURVEILLANCE SYSTEMS

INSTALLATION GUIDE

Logipix Stadium Surveillance System

Devices:

LPIX15-01-AB, LOBJ-05P, LOBJ-14, LPIX- PTZ-04, LPIX2-B, LPIX2-D, LNVR-H-16-R, LNVR-16-8-E, LNVR-16/32

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Hardware installation

According to the designed plan determine the places of each device in the stadium and install the Ethernet cables between them. Determine the places of the cameras, the network switches, the LNVRs and Hybrid extenders, furthermore the Server and the Client workstations! Connect the LNVRs to the company network (VMS VLAN) by CAT6 cables and connect the cameras to the Local Network Switches (CAMERA VLAN) by CAT5 cables. Connect the switches to the LNVRs by CAT6/optical cables (requires additional SFP modules). Ensure the proper power supplies for the Logipix multi-megapixel fix cameras, Logipix FullHD fix cameras, the Logipix PTZ cameras, the Logipix Hybrid extenders and the LNVRs. See the **Appendix A** at the end of the **Hardware installation** chapter of this document!

Take into account some important environmental conditions while determining the devices' final places!

- Determine places for the cameras, both for the fix multi-megapixel Logipix cameras and for the Logipix PTZ cameras where they can be installed safely and properly, where their operation cannot be disturbed by any meteorological effect (heavy rain, wind or other natural calamities) or spectator vandalism.
- The LNVRs and the Hybrid Extenders must be installed indoor or in a heated outdoor box to ensure the proper temperature for operation in any season which has been specified in the data sheets.

Installation of the Multi-megapixel Fix cameras

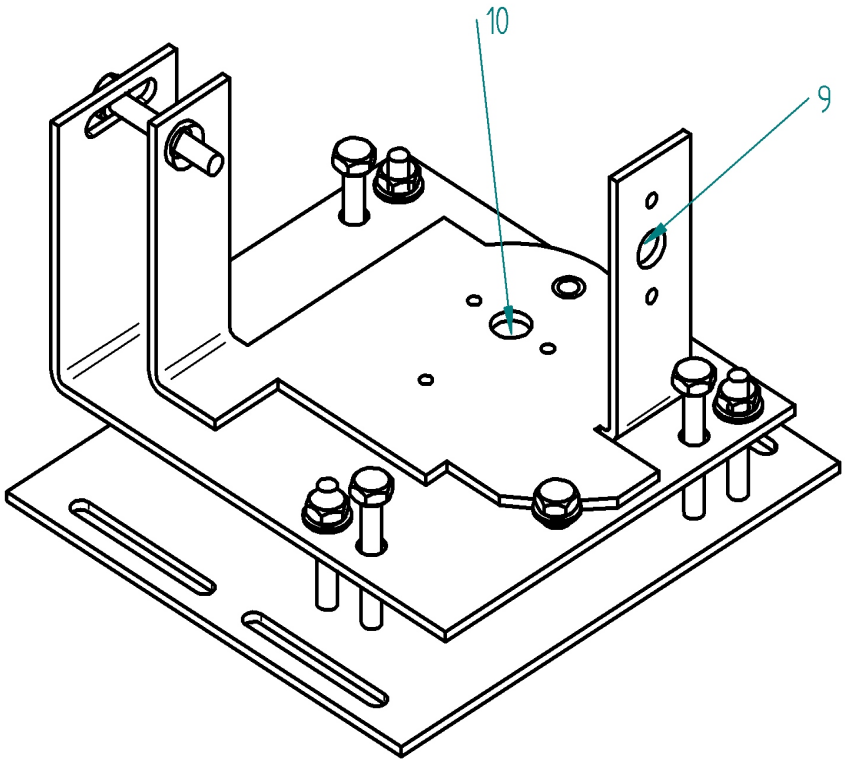
Installation steps

- Unpack the camera
- Remove the sensor's protective cap
- Mount the lens
- Mount the camera on the position fine-tuning panel
- Install the camera in a camera enclosure
- Connect the CAT5 cable
- Connect the power cable
- Connect audio Output (optional)
- Setup the focus
- Setup the IRIS

Remove the protective cap and mount the lens

After unpacking a camera, remove the sensor's protective cap and mount the lens as soon as possible to prevent sensor soiling. Rotate the lens clockwise to fix it on the camera. Leave the front lens protective cap until you have installed the camera in the outdoor camera enclosure! Protect the camera and the lens from physical impact and moisture!

Mount the camera on the position fine-tuning panel



Remove the protective stick from the bottom of the camera. Suit the Logipix camera to a mounting hole of the upper part of the position fine-tuning panel, depending on whether you want to install the camera in a vertical or in a horizontal position (**9** or **10**)! Use a M5×6 size screw to fix the camera on the panel! Use a pipe wrench to tighten the screw!

Install the camera into a camera enclosure

Important requirements for the camera enclosure:

- The material of the enclosure must be aluminum
- The material of the enclosure's front must be glass
- The enclosure must be a top opening one
- The outdoor camera enclosure must have heating and cooling system
- **The ventilation system of the enclosure must be set to continuous circulation**

- It must have sun shield

Mount the lower part of the positioning panel into the camera house. To install the Lower part of the panel in an enclosure, follow the steps of the enclosure's user manual! It is important to install the camera in the enclosure at the best position. It cannot be neither too close or nor too far from the front glass of the camera enclosure. The proper position of the camera in the enclosure is where the distance between the front lens of the camera and the front glass of the housing is 15mm.

- After the lower part has been installed inside the housing, assembly the two parts of the positioning panel.
- Put the included three springs on the three setting screws on the lower part.
- Fit the two parts together by the three setting screws
- Put the included nuts to the setting screws and tighten them to fix the platform vertically.
- Close the enclosure and fix it at the previously designated point!
- Set the sun shield to a position what can prevent the sunlight to reach directly the front glass of the enclosure

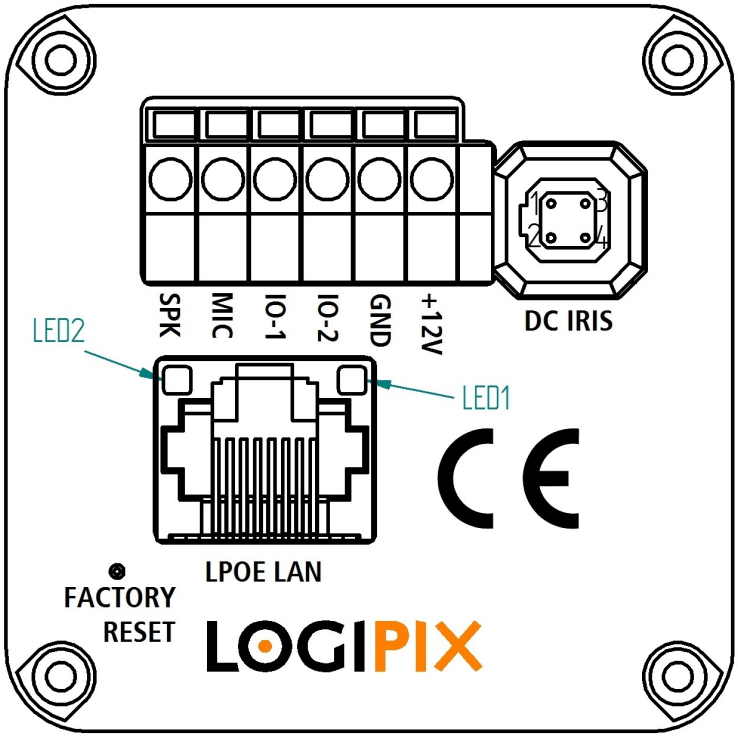
Connect the CAT5 cable

The connected cable must be the final one which will be used in the network infrastructure. If you are not using the final CAT5 cable, you may ruin the camera's final position when rewiring after position and focus setup. Lead the CAT5 Ethernet cable through the cable gland of the camera enclosure and connect it with the RJ45 plug to the LAN connector of the camera. The connector can be found at the back of the camera.

Connect the power cable

The connected cable must be the final one which will be used in the system infrastructure. Install ferrules for the copper wires of the power supply. Use a crimping tool to perform this process. Lead the 2×0.5 mm^2 copper wire

through the cable gland of the camera enclosure and connect it to the two-pin power connector of the camera (GND and +12V phase). The spring connectors can be found at the back of the camera. Use a screwdriver to push in the orange colored plastic spring lifter, connect the wires then release the spring lifter!

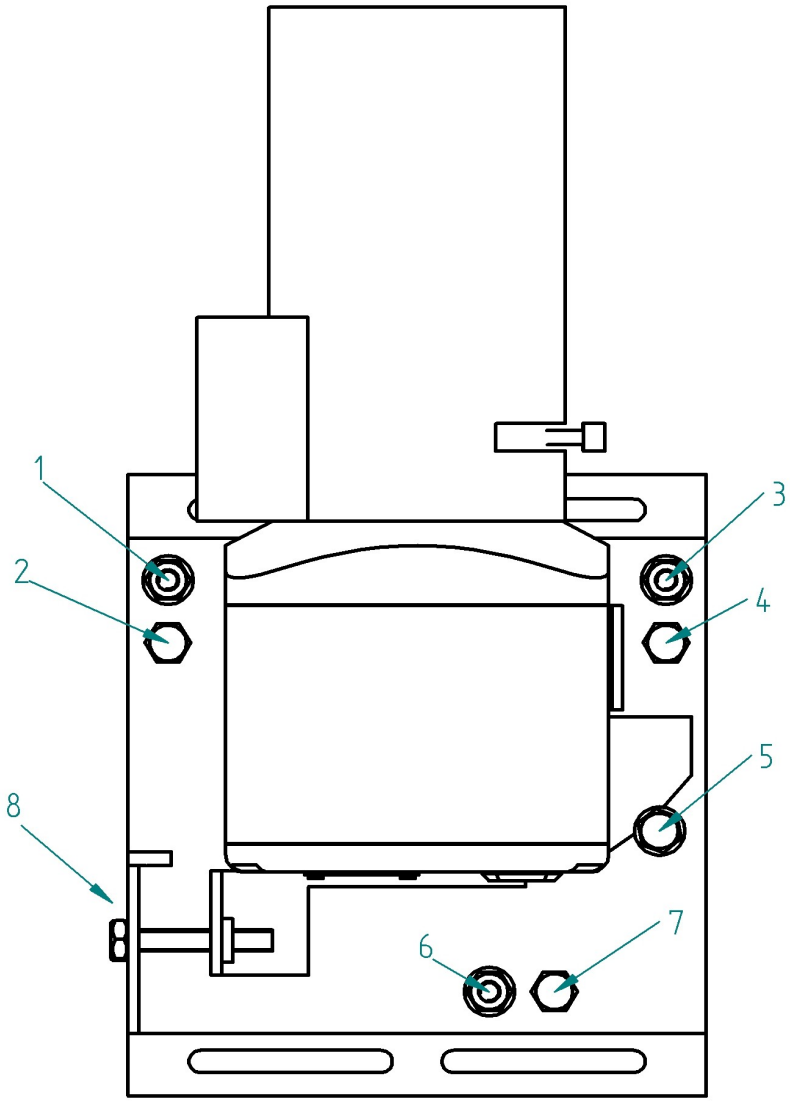


Setting the fix cameras' final position

- Connect the cameras' CAT5 cables to the installed Local Network Switches!
- Practically use a laptop with a Windows operating system at every point, where a group of fix cameras are installed, to perform their settings!
- Install the free SCPlayer software on the laptop! You can find the software on the installation CD. Open the SCPlayer folder and start the *scplayer_install.exe* installation wizard! Click on Next after you've read the welcome message! Browse the destination folder of the program! Continue with the next window! You can create a Start Menu folder if

you want. On the next window sign the Create shortcut on desktop checkbox, then click on Next! After you've read the installation summery, click on Install! After the installation has finished, restart your computer!

- Connect the Local Network Switch to your computer and run the SCPlayer by clicking on the desktop icon! Adjust the IP address of the camera in the pop up window! The camera picture is going to be shown immediately on the video monitor surface of the software. If the picture is upside down, it can be rotated by pressing **R**.
- Several SCPlayer software can be run simultaneously. Open two more SCPlayer software! Visualize neighboring camera pictures in each video matrix window! Arrange the windows on the desktop in one common line according to the physical camera order! The essence of this method is to see the camera pictures relative to each other.
- Set the direction and the angle of each camera. You can find the virtual view of each camera in the previously designed digital plan. These pictures help you to find the right and final position of each camera. Use clearly visible objects at the seats at image overlapping areas to find easily the right position! First move the camera with the camera enclosure and find the approximately right position, than fine-tune the position by setting the position fine-tuning panel in the camera enclosure! To set the panel, follow the steps below:



- Loosen the fixing screws (2), (4), (5), (6)
- Set the rotation (horizon) with screws (1) and (3)
- Set the pan position (height of the horizon) with screw (7)
- Set the tilt (horizontal) position of the camera with screw (8)
- Tighten the fixing screws (2), (4), (5), (6)
- Repeat these steps for all the cameras in the camera group!

NOTE: If you don't have the opportunity to connect more cameras at the same time to the laptop, connect the cameras directly to the computer! After you

have positioned one camera, create a screenshot of the camera picture and use this for a reference when you are positioning the next camera!

Setup the focus and the Iris

On the Lobj-14 the ring closer to the front lens is the iris ring, and the other is the focus ring.

On the Lobj-05 the ring closer to the front lens is the zoom, and the other is the focus. The iris is controlled electronically by the camera. It is necessary, to set the field of view of this lens.

1. Loosen the zoom ring fixing screw! Rotate it counter-clockwise.
2. Rotate the zoom ring left or right until you reach the desired field of view. You can find the virtual view of each camera in the previously designed digital plan. These pictures help you to find the right and final field of view of each camera. Place clearly visible objects on the seats / corridors, what help you to set the correct field of view. If needed, set the focus ring as well to get a cleaner image.
3. Rotate the zoom ring fixing screw clockwise to tighten it and fix the zoom position.

NOTE: The focus setup must be performed with a fully opened Iris!

In case of a Lens with manual iris:

1. Loosen the Iris fixing screw of the lens! Rotate it counter-clockwise!
2. Rotate the Iris ring of the lens counter-clockwise to fully open it!
3. Rotate the Iris fixing screw clockwise to tighten it and to fix the Iris position!

In case of a P-iris lens

1. Enter the camera configuration menu in the SCPlayer software by pressing **C**
2. Locate the camera in the list on the left side of the window
3. Find the “Logipix settings” node

4. Select the "**III**" tab
5. Select P-iris, and save settings

The focus of the Logipix camera can be set easily with a special configuration function which you can find in the free SCPlayer software. The function utilizes the traits of the JPEG2000 compression standard, that more details - with the same compression -, results a larger image size. Thus the largest image size means the best quality.

The focus setup must be performed for a zoomed area on the picture!

It is important to choose an area for the focus setup where there are no moving objects during the setup, moreover there are no significant changes in light condition.

1. Press **F12** button, or choose *Camera focus setup* at *Device settings*!
2. Zoom in to the desired part of the picture by the mouse scroll (or **PageUp**, **PageDown** keys), which should be the sharpest area.
3. After the enlarging click on the image or press the **Space** key! Thus the current image size will be the maximum (the image size marker on the left will be at its highest value).
4. Turn the focus ring on one direction cautiously! If there is a decreasing effect on the image size, turn the focus ring on the other direction.
5. When the image starts to be sharper, the image size starts to increase. First, the indicator on the left side reaches its maximum, then stays there. The image size increase can be seen on the lower right corner. After the sharpest point has been found, the indicator starts to fall. In this case turn the focus ring on the other direction until the indicator reaches its maximum again.

Setup the Iris

Rotate the Iris ring of the lens to find the right position!

1. Loosen the Iris fixing screw of the lens! Rotate it counter-clockwise!
2. Rotate the Iris ring of the lens to adjust its position!

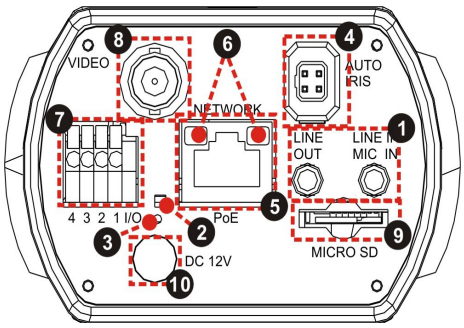
3. To close the Iris rotate the ring clockwise! To open it, counter-clockwise is the right direction.
4. Rotate the Iris fixing screw clockwise to tighten it and to fix the Iris position!

NOTE: The Iris controls the amount of the light passing through the lens. The smaller the aperture opening, the less light can reach the camera sensor. Moreover the Iris affects the depth of field as well. The larger the aperture opening, the shallower the depth of field.

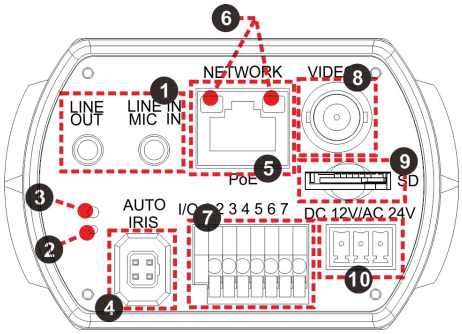
Installation of the Logipix Full HD Box camera

Camera Rear Panel

DC 12V / PoE



DC 12V/ AC 24V/ PoE



No.	Connector	Definition			
1	LINE OUT & LINE IN	Two-way audio transmission			
2	Power LED	Power connection indication (green light)			
3	Default button	Reset to factory default; press the button with a proper tool			
4	AUTO IRIS Connector	Connecting to Auto Iris Lens			
5	PoE NETWORK	For Ethernet Cable and SPE connection			
6	Network LEDs	Network connection and activity indication			
7	Alarm I/O	1	Output +	5	GND
		2	Output –	6	D –
		3	Input +	7	D +
		4	Input –		
8	VIDEO (BNC connector)	For video output			
9	Micro SD Card slot	For videos and snapshots storage			
10	AC 24V/DC 12V Connector (AC 24V Model)	+	AC 24V: Power-1	DC 12V: Power	
		⏚	AC 24V: Earth GND	DC 12V: Reserved	
		–	AC 24V: Power-2	DC 12V: GND	

Lens Mounting

If C-Mount lens is used, after removing the camera's plastic cover, you need to mount the supplied C/CS mount adapter to the camera. Then attach the lens onto the C/CS mount adapter. Rotate it clockwise. Connect the iris cable to the rear part of the camera.

Mount the camera

- The camera supports both standing and ceiling consoles.
- Use the appropriate IP level housing for outdoor operation.
- To install the camera in a camera house refer to the user's manual of the housing.

Power up the Camera

- To power up the IP Camera, please plug the camera's DC 12V / AC 24V Cable into the power adaptor.
- Alternatively, connect the Ethernet Cable to the camera's PoE port and plug the other end of the cable into a PoE switch.

NOTE: If PoE is used, make sure the Power Sourcing Equipment (PSE) is in use in the network.

Ethernet Cable Connection

- Connect one end of the CAT5 Ethernet Cable to the PoE Network Connector of the IP Camera, and the other end of the cable to the network switch or PC.

NOTE: In some cases, Ethernet Crossover Cable might be needed when connecting the IP Camera directly to the PC.

NOTE: Check the status of the link indicator and activity indicator LEDs. If the LEDs are unlit, please check the LAN connection.

Green Link Light indicates good network connection.

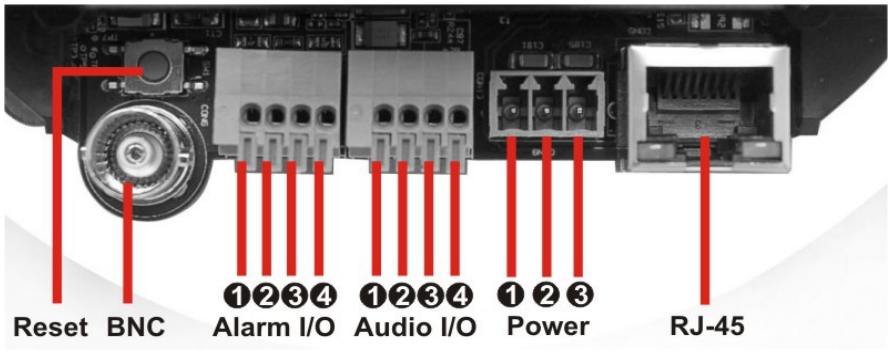
Orange Activity Light flashes for network activity indication.

Setup the position and the viewing angle

- The camera picture can be checked by its analog output.
- Connect the analog output of the camera to the BNC connector of an analog video setting monitor!
- Set the position of the camera with the console or the housing positioning options!
- Set the viewing angle and focus using the ring with the “**N**” and “**F**” labels!

Installation of the Logipix Full HD Dome camera

Connectors of the camera



Connector		Pin No.	Definition	Remarks
Reset Button		-	Restore to factory default	
BNC		-	Analog Video Output	
Alarm I/O		1	GND (Input)	Alarm connection
		2	Input	
		3	Output	
		4	Output	
Audio I/O		1	Output (L)	Two-way audio transmission
		2	Output (R)	
		3	GND	
		4	Input	
Power	**DC 12V**	1	Power	Power connection
		2	Reserved	
		3	GND	
	AC 24V	1	Power-1	
		2	Earth GND	
		3	Power-2	
RJ-45		-	10/100 Mbps Ethernet/ PoE	

Dismount the camera from the mounting bracket

- Dismount the enclosure of the camera with the included tool!
- Loosen the fixing bolt with a Phillips screw driver!
- Push the locking tabs at the sides!
- Pull out the camera module from the mounting bracket!

Mount the bracket of the camera

- Drill the proper size four holes for the bracket into the surface!
- Use the included wall-plugs and screws to fix the bracket on the surface!
- Fix the camera module on the bracket!

Power up the Camera

- To power up the IP Camera, please plug the camera's DC 12V / AC 24V cable into the power terminal block.
- Alternatively, connect the Ethernet cable to the camera's PoE port and plug the other end of the cable into a PoE switch.

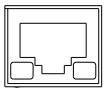
NOTE: If using PoE, make sure Power Sourcing Equipment (PSE) is in use in the network.

Ethernet Cable Connection

- Connect one end of the CAT5 Ethernet cable to the RJ-45 connector of the IP Camera, and the other end of the cable to the network switch or PC.

NOTE: In some cases, you may need to use an Ethernet crossover cable when connecting the IP Camera directly to the PC.

NOTE: Check the status of the link indicator and activity indicator LEDs; if the LEDs are unlit, please check LAN connection.



Green Link Light indicates good network connection.

Orange Activity Light flashes for network activity indication.

Setup the position and the viewing angle

- The camera picture can be checked by its analog output.
- Connect the analog output of the camera to the BNC connector of an analog video setting monitor!
- Set the position of the camera with the console or the housing positioning options.
- Set the viewing angle and focus using the rings of the lenses!

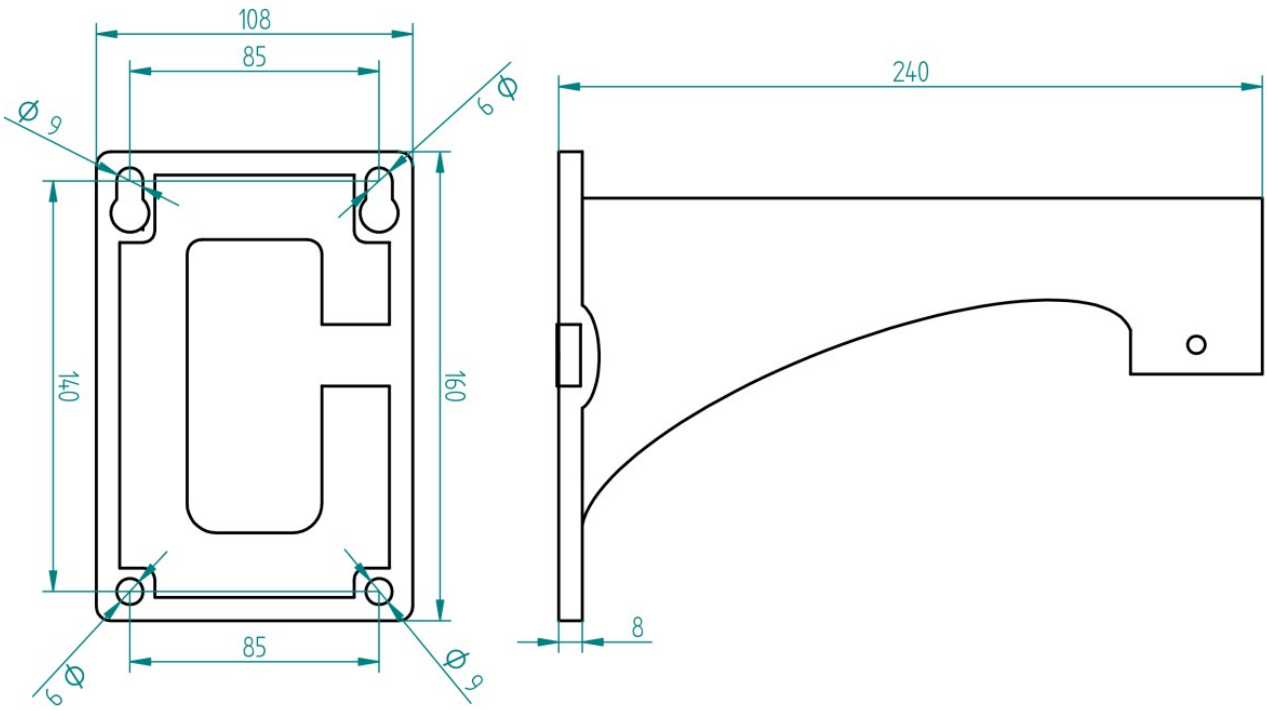
Installation of the Full HD Logipix PTZ cameras

Installation steps

- Unpack the camera
- Drill the holes
- Fix the camera on the Mounting bracket
- Connect the Ethernet cable
- Connect the Power cable
- Check the operation of the PTZ camera

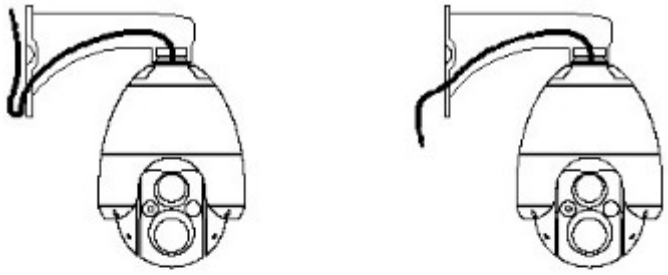
Drill the holes

Locate the planned position of the Logipix PTZ camera. Drill the proper size holes in the surface according to hole positions of the drill template which you can find in the packet! Place 12×100 wall-plugs in the holes!

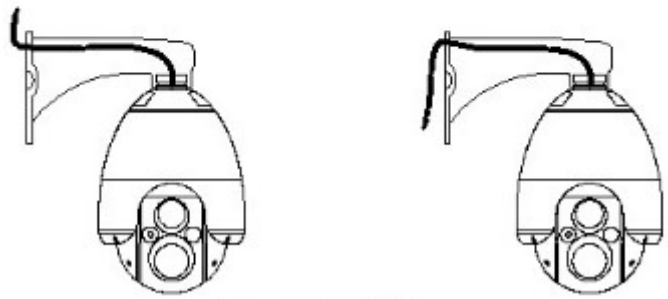


Fix the camera on the Mounting bracket

- At first lead the cables of the camera through the mounting bracket!



Correct wiring



Incorrect wiring

- Place the mounting bracket to the connecting part of the case on the top. The connecting part of the case is designed with an edge on it. The three tightening screws of the mounting bracket will hold tight the camera by this edge.
- Beware not to damage the cables while placing the mounting bracket on the PTZ camera! Tighten the screws of the mounting bracket! Use a Phillips screwdriver!
- Mount the bracket on the surface using four 8x100 coach screws! Use a pipe wrench to tighten the screws!

Connecting the LAN

Connect the CAT5 Ethernet cable with the RJ45 plug to the RJ45 socket of the camera!

Connecting the Power

Connect the external power supply to the power cable of the camera!

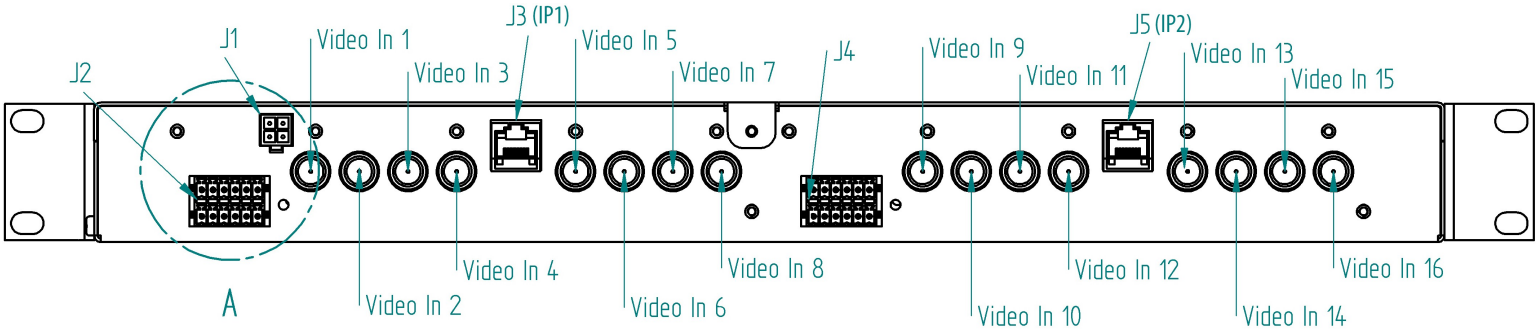
Check the operation of the PTZ cameras

- Connect the Logipix PTZ camera to your computer and run the previously installed SCPlayer by clicking on its desktop icon! Adjust the IP address of the PTZ camera in the pop up window! The camera picture is going to be shown immediately on the video monitor surface of the software.
- A unique solution has been developed for managing the Logipix PTZ cameras, whereby the camera is movable remotely by the mouse. If you click on the image of the camera, then it turns, so as the given point will be the center of the picture. You can zoom by scrolling.

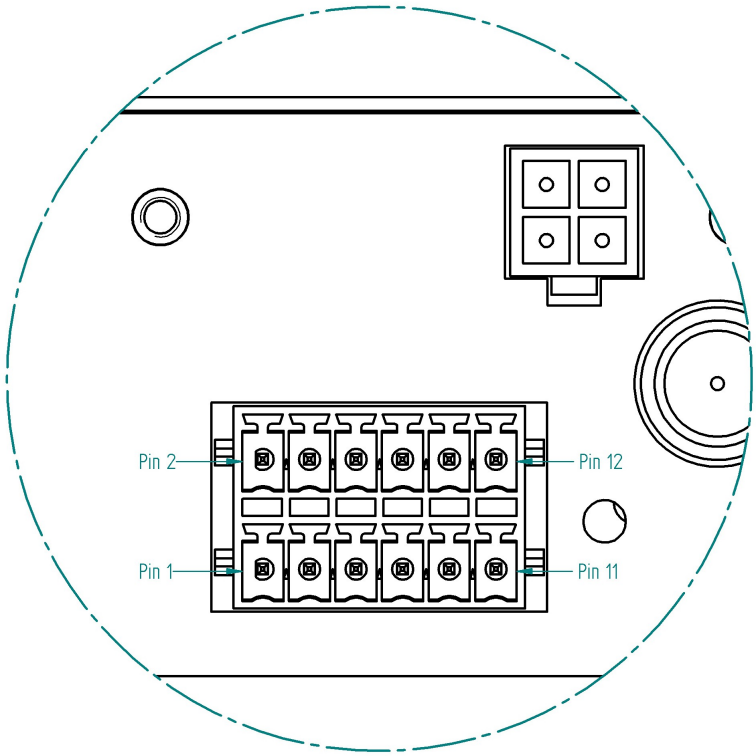
Installation of the Logipix Hybrid Extenders

- Mounting the Hybrid Extender into the rack cabinet
- Connecting the analog cameras
- Connecting the CAT5 cables
- Power on
- Checking LED information

Rear view



Connector	Name
J1	Power connector
J2	Serial line and I/O pins
J3	RJ45 socket for the first group of cameras
J4	Serial line and I/O pins
J5	RJ45 socket for the second group of cameras
Video In 1-16	BNC connectors



DETAIL A

Pin order of J2 and J4						
Pin	2	4	6	8	10	12
Function	Digital I/O 1	Digital I/O 2	Digital I/O 3	GND	RS485+	RS485-
Function	GND	GND	GND	GND	NC.	NC.
Pin	1	3	5	7	9	11

Mounting the Hybrid Extender into the rack cabinet

The 1U high Hybrid extender can be mounted in a 19” rack cabinet.

1. Place 4 pieces of M6 cage nuts (2 on each side) on the front columns of the rack cabinet according to the mounting holes of the Hybrid Extender, which you can see at the edges of the front panel!
2. Take 2 pieces of screws for the rack cabinet!

3. Suit the Hybrid Extender to the cage nuts and fix it by tightening both screws!

Connecting the analog cameras

- Connect the BNC cables of the analog cameras to the BNC connectors of the Hybrid Extender. The connectors can be found at the back of the Hybrid extender.

Connecting the analog PTZ cameras

- Connect the BNC cables of the analog PTZ cameras to the BNC connectors of the Hybrid Extender! The connectors can be found at the back of the Hybrid extender.
- Connect the PTZ cameras serial lines to the RS-485 line of the Hybrid Extender! The connectors can be found at the back of the Hybrid extender.

Connecting the CAT5 cables

Connect the CAT5 Ethernet cables' to the RJ-45 sockets of the Hybrid Extender! The sockets can be found at the back of the Hybrid extender.

Power on

You need to power the Logipix Hybrid Extender using the bundled 12V DC power supply. The extender will boot immediately upon powering.

Checking LED information

The left side

The right side

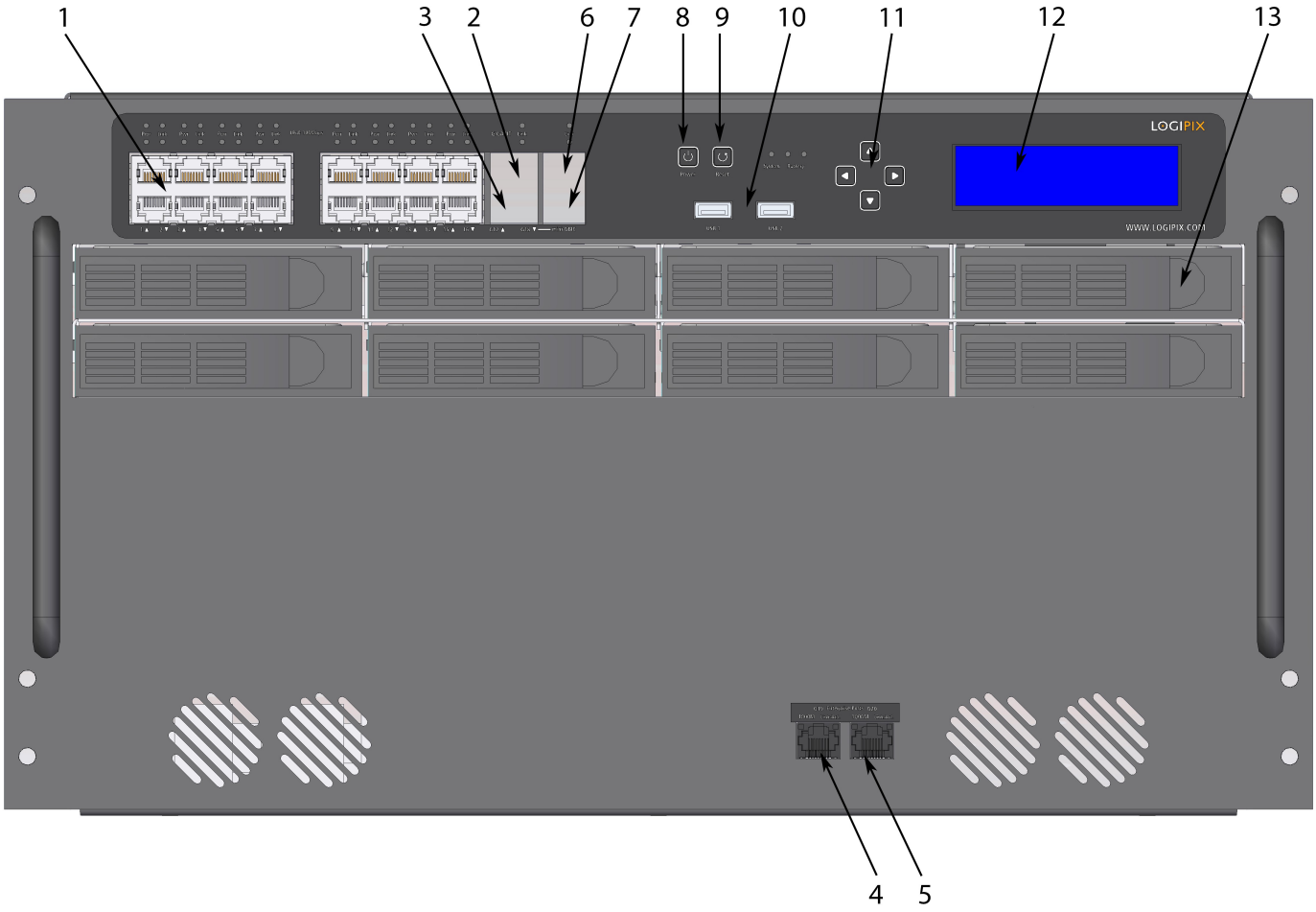
LED	Status	Description
Ready LED	Blinking red	Normal operation
Net Link LED	Lights up in orange	Network link present
Net Act LED	Blinking green	Network communication
Camera LEDs (Video Signal)	Lights up green	Normal operation
	Dark	Input not configured
	Blinking green	Input configured, but bad / no video signal

Installation of the LNVRs (rack-mount)

Installation steps

1. Install the HDDs
2. Mounting the LNVR into the rack cabinet
3. Connecting to the network
4. Connecting the Logipix cameras
5. Connecting the Hybrid Extenders
6. Connecting the power
7. Power on
8. Checking LED information

The front view



	Port / Button	Function
1	100 MBps Ports 1-16	LPoE ports for direct Hybrid Extender connection
2	GIGABIT Port G17	Camera VLAN – Gigabit port for the Logipix cameras (Local Network Switch must be connected here)
3	GIGABIT Port G18	Camera VLAN – Gigabit port for the Logipix cameras (Local Network Switch must be connected here)
4	GIGABIT Port G19	VMS VLAN – Gigabit port for company network connection

5	GIGABIT Port G20	VMS VLAN – Gigabit port for company network connection
6	Optical Port 1	Camera VLAN – Optical port for the Logipix multi-megapixel fix cameras (connected to the Local Network Switch)
7	Optical Port 2	Camera VLAN – Optical port for the Logipix multi-megapixel fix cameras (connected to the Local Network Switch)
8	Power	Power on and Power off
9	Reset	Reset the LNVR (about 3 min)
10	USB1 / USB2	-
11	Arrows	-
12	LCD Display	LOGIPIX
13	HDD racks 1-8	Hot swap mobile racks for 3,5” SATA HDDs

Install the HDDs

1. The hot swap HDD mobile racks can be found at the front panel of the LNVR. Smoothly pull the spring lock of a mobile rack to loosen it, then pull it out!
2. Carefully place the HDD into the mobile rack and be sure that the printed label on the HDD is side up!
3. Fix the HDD in the mobile rack by tightening the HDD screws through the mounting holes! Use at least four screws. The mounting holes can be found on the side and on the bottom of the mobile rack.
4. Once the HDD is in the mobile rack put it back to its place and gently push the spring lock to fix it in the LNVR!
5. Repeat the previous steps with all the HDDs!

NOTE: There are four HDD racks in each row at the front panel. Each row forms a RAID group. Place the HDDs into the LNVR according to the groups. For example if you are using only 4 HDDs in a LNVR-16-8 fill the first row!

Only those rows get power which have at least one configured HDD.

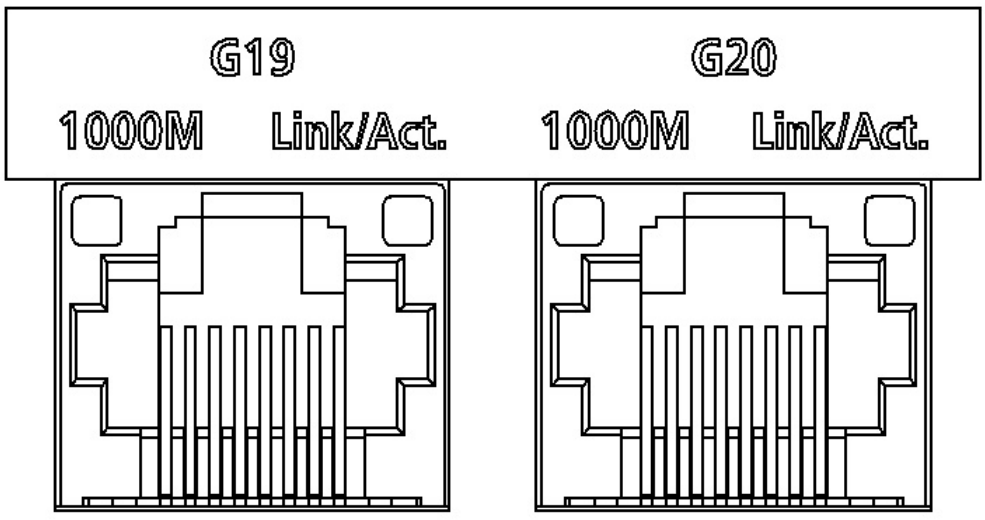
Mounting the LNVR into the rack cabinet

The 6U high LNVR can be mounted in a 19” rack cabinet.

4. Place 6 pieces of M6 cage nuts (3 on each side) on the front columns of the rack cabinet according to the mounting holes of the LNVR, which you can see at the edges of the front panel!
5. Take 6 pieces of screws for the rack cabinet!
6. Suit the LNVR to the cage nuts and fix it by tightening all the six screws!

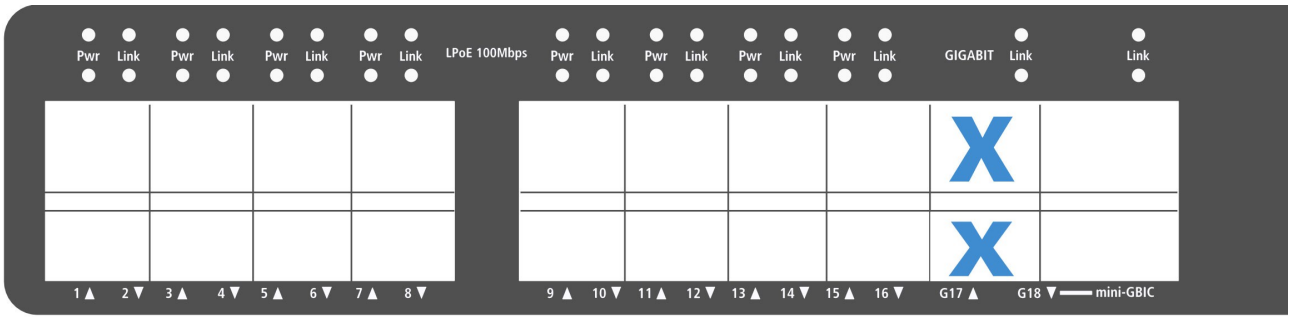
Connecting to the network

Connect the LNVR to the Company Network Switches (VMS VLAN) by two CAT6 cables. Connect the cable's RJ45 plugs to the LNVR's Company Gigabit ports! The exact ports are indicated on the picture below (G19 and G20).



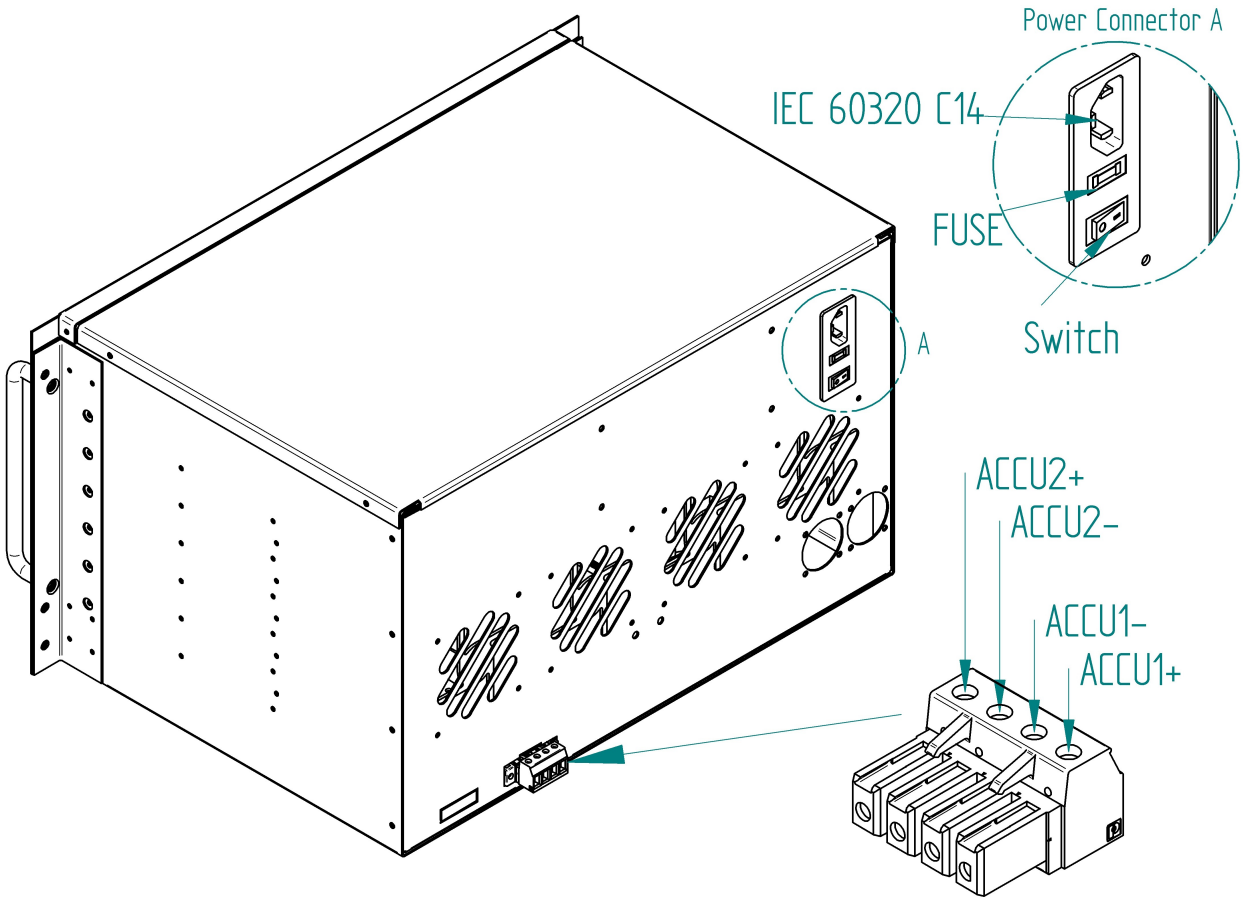
Connecting the Logipix cameras and the Hybrid extenders to the LNVRs

- All the Logipix cameras, the Logipix Full HD cameras, the Logipix Full HD PTZ cameras and the Logipix multi-megapixel cameras and the Logipix hybrid extenders must be connected to Local Network Switches of the CAMERA VLAN. Connect them by CAT5 cables!
- Connect the CAT6 cables of the CAMERA VLAN switches to the Gigabit LAN connectors (G17 and G18 ports) of the Rack mount LNVR! The exact places of the ports are indicated on the picture below.



Connecting the power and power on

Connect the power cable to the Logipix Network Video Recorder! The power connector can be found at the back of the LNVR. Connect the power cable to the main power (230V AC)! After connecting the power cable the LNVR is turned on immediately and it will be ready to record after configuration. After the first startup the LNVR can be switched on and off by the Power button.



Optionally two external 24V battery cells (ACCU1 and ACCU2) can be connected to the LNVR according to the draw above. In case of blackout the LNVR is able to further operate. To calculate the operation time after the power failure has occurred take into consideration the power consumption of the LNVR and the electrical charge of the battery cells!

Checking LED information

System LED states during startup:

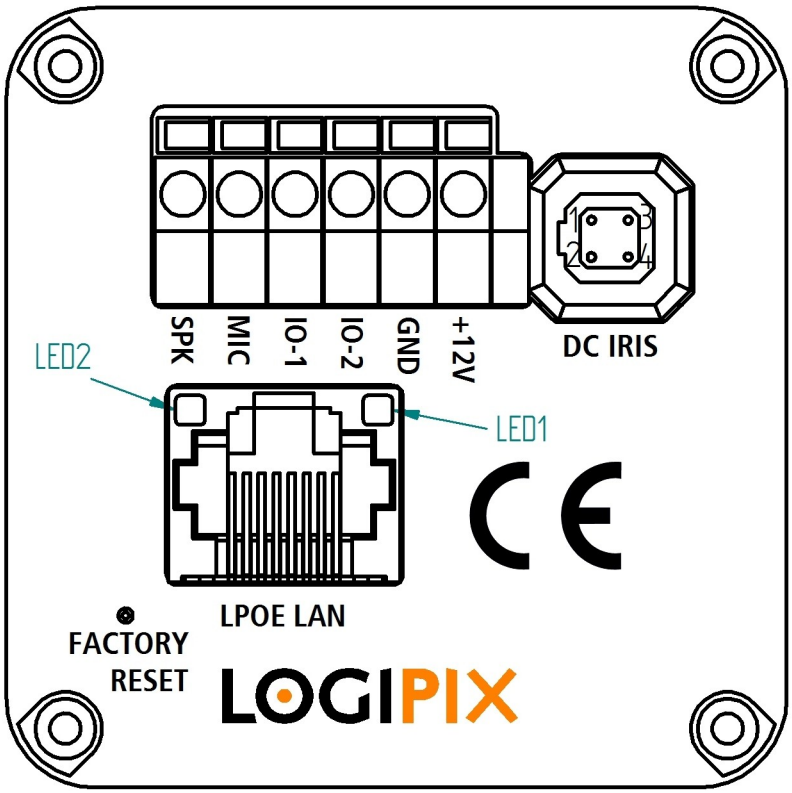
LED	States	Description
System	Lights up in red	LNVR is starting up (it lasts about 11.5 sec)
	Lights up in yellow	Initialization
	Stays yellow for a long time	There is no communication with the motherboard (no watchdog)
	Lights up in green	LNVR is ready, recording

LED states during operation

LED	States	Description
Pwr	Lights up in green	The camera gets power through the 100 Mbit LPoE port
Link	Lights up in green	Connection has realized through the 100 Mbit LPoE port
GIGABIT Link	Lights up in green	Connection has realized through the Gbit port
Optical Link	Lights up in green	Connection has realized through the optical port
System	Lights up in red	Switching off process has started, or standby operating mode
	Blinking in RED	Motherboard power failure
	Blinking in yellow	LPoE or HDD power failure

Battery	Lights up in green	Operation from external battery
	Blinking in green	ACCU is charging
	Lights up in yellow	ACCU voltage under 22V
	Lights up in red	ACCU Low

Checking LED information of the cameras



LEDs of the Logipix multi-megapixel cameras

	LED1	**LED2**

Indicating	Network Link – Activity	Power – Ready
State1	Blinking in green according to Ethernet communication	Lights up in green if the camera gets power
State2		Blinking in green and red if the camera is ready to use

LEDs of the Logipix PTZ cameras

- The LEDs can be found inside the camera enclosure. To make them visible, you have to unscrew the hexagonal metal cover panel, which you find at the front bottom of the horizontal rotating part of the camera case. You can find the factory reset button on this panel as well near the LEDs.
- After you have checked the LEDs screw back the hexagonal metal cover panel!

	LED1	**LED2**
Indicating	Network Link – Activity	Power – Ready
State1	Blinking in green according to Ethernet communication	Lights up in green if the camera gets power
State2		Blinking in green and red if the camera is ready to use

Appendix A

Power supplies of the devices

Device	Power supply
Logipix multi-megapixel fix camera	10-24V DC; 12VDC: 0,7A, 24VDC: 0,35A
Logipix Full HD fix camera	PoE
Logipix PTZ camera	20-28V DC, 2.5A
LNVR	100-240VAC, 47-63 Hz single phase; 120VAC: 4.2A; 230VAC: 2.1A
Hybrid extender	12V DC

Appendix B

Bitrates of the cameras in the system			
Camera	**Frame size [Mbyte]**	**FPS**	**Bitrate [Mbit/sec]**
Logipix 15 MP camera	2.3	5	100 *
Logipix PTZ camera	0.6	12	60 *
Logipix 2 MP camera	0.1	5	4-8 **
Analog camera	0.06	12	6

* The LNVR records the video stream of the Logipix 15 MP cameras and the Logipix PTZ cameras using a VRM fail-safe file system which means the frames of the video stream are stored divided on four HDDs at once. Thus there is no need to mirror the data.

** The video stream of the Logipix 2 MP camera can be recorded in a redundant RAID1 system. In that case every frame is recorded twice to the HDDs, therefore the stream's bitrate is doubled.

Installing the software

Installing the server

Hardware configuration

Name	**Recommended**
Operating system	Windows Server 2008 x64 or Windows 7 x64
Processor	Intel Core i7 – Quad Core
System RAM	8 Gbyte RAM
Graphics card	ATI Radeon HD 5450
Hard Drives	1 TB HDD

Before the installation

- Make sure that that all hardware drivers (Video card is the most important) are installed and updated to latest version!
- Make sure that all Windows Updates are installed!
- It is strongly recommended to Set User Account Control Settings to Never notify.
- It is strongly recommended that all users permitted to login have administrator rights!
- Turn off Firewall or allow the following ports:

  Device ports:

8080	10601
10000	10602
10220	10603
10600	10606

Software ports:

3050	10272	10704
10240	10700	10705
10262	10701	10710
10263	10702	10800
10271	10703	10806

Installation steps

- Put the installation CD in the server computer and run **STPInstall.exe**!
- Choose Installation!
- After reading the welcome message, click **Next**!
- Browse the folder in which you would like to install the programs!
- On the next popup window browse the folder of the software keys, then select all components to be installed on the computer!
- On the next window select the program language and adjust the folder of **Application logs**, **Download manager** and **Video proxy** (it is recommended to set these to different drive from the system and database)
- You can decide where should the system create the daily backup of the database
- You can decide to create a **Start menu** folder.
- On the following window select a **Firebird server** to be installed according to your operation system! You can select additional modules as well on this window.
- After you have checked the install summary, click on **Install**!
- After installation restart the server computer!

Installing the workstations

Hardware configuration

Name	**Recommended**
Operating system	Windows 7 x64
Processor	Intel Core i7 – Quad Core
System RAM	8 Gbyte RAM
Graphics card	ATI Radeon HD 7750
Hard Drives	1×3 TB HDD

Before the installation

- Make sure that that all hardware drivers (Video card is the most important) are installed and updated to latest version!
- Make sure that all Windows Updates are installed!
- It is strongly recommended to Set User Account Control Settings to Never notify.
- The user account must allow the software to modify the necessary files on the hard disk (in the C:\STP directory).
- Turn off Firewall or allow the next ports:

  Device ports:

8080	10601
10000	10602
10220	10603
10600	10606

Software ports:

3050	10272	10704
10240	10700	10705
10262	10701	10710
10263	10702	10800
10271	10703	10806

Installation steps

1. Put the installation CD in the client computer!
2. Install a Firebird client according to your operation system! The Firebird client can be found in **CD:\Utils\Other\firebird\FB v2.5.2** folder.
3. Create a new folder on the **C:** drive, called **STP**! **C:\STP**
4. Share the **Clients** folder on the server computer! Server computer – **C:\Program files (x86)\STP\Clients**
5. Map the shared **Clients** folder on the client computer! Click on **Computer** icon on the desktop and use the **Map network drive** button! Adjust a **Drive** letter (**X:**) and browse the **Folder**!
6. Create a shortcut for the **Control Center** on the client computer's desktop of the **AccAlrm.exe** which you can find in the shared **Clients** folder!
7. Rename the shortcut to **Control Center**!
8. Right click on the shortcut and select Properties in the popup window! Complete the **Target** field with the following: ***/fileserver /inifile="C:\STP\AccAlrm.ini"*** The result should be like this: ***"X:\AccAlrm.exe" /fileserver /inifile="C:\STP\AccAlrm.ini"***
9. Start the Control Center by clicking on the shortcut at the desktop of the client computer!
10. Adjust the server IP address in the popup window!

11. Allow to open the new file (Yes), then browse the proper software key for the given client computer from the **Keys** folder of the Installation CD!
12. Adjust a **User name** and a **Password**!
13. The AccAlarm.ini file is going to be created in C:\STP folder.

Software configuration

Activating special Stadium functions

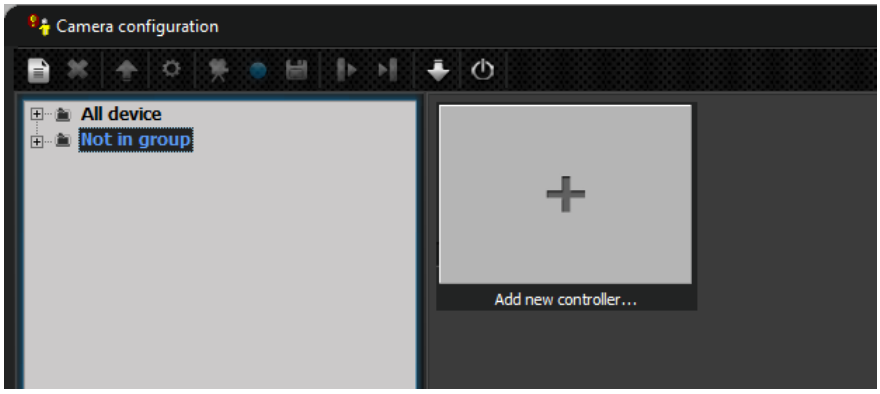
1. Go to **C:\STP** folder on the client computer and open **AccAlrm.ini** in an editable **Notepad** (eg. in Total Commander press **F4**)!
2. Find the [Stadion] section and enable the function! Rewrite *Enabled=No* to *Enabled=Yes*
3. Find the [Client] section and enable the Events Form! Rewrite *EnabledEventsForm=No* to *EnabledEventsForm=Yes*
4. Save and close the .ini file!

Registering the devices

There are two ways to register new devices in the system.

Traditional registration

1. Start the Control Center software!
2. Click on the **Configure** icon on the main software surface!
3. Find the left tree in the popup **Camera configuration** window and right click on the **Not in group** tree node, than left click on the **Add new controller...** or you can use the **Add new controller icon...** as well! The window of the **New item** appears. Enter the **Name** of the LNVR, adjust its **IP address** and choose **Logipix NVR Enterprise** from the **Type** list! Click on **OK**!

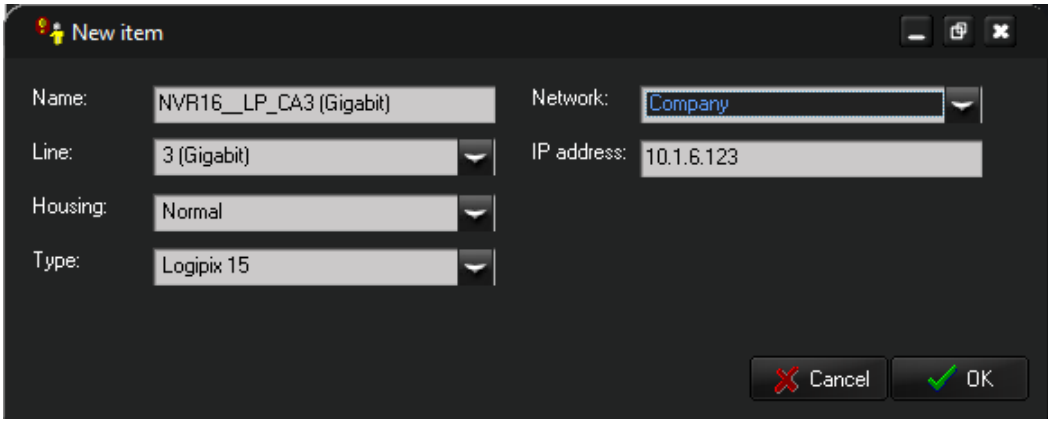


4. The configuration window of the LNVR appears. Set the HDDs which have been physically installed in the LNVR! Sign **Raid group 1** and **Raid group 2**!

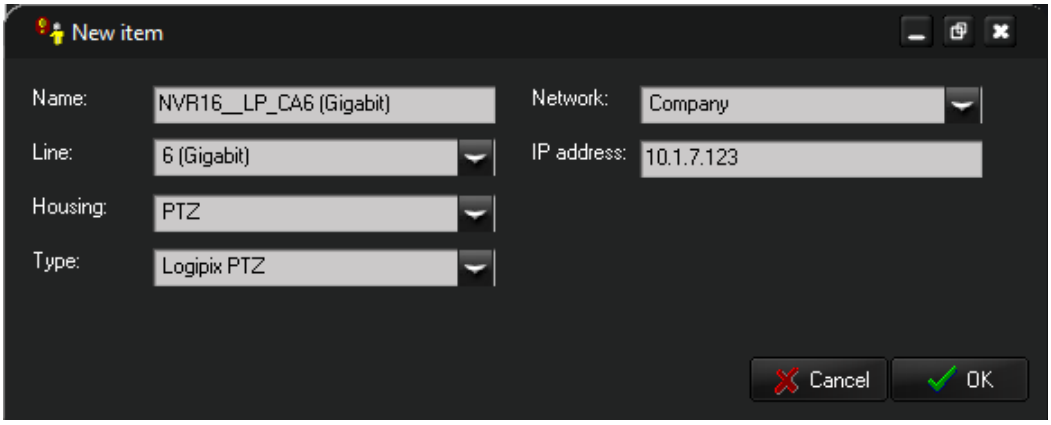
NOTE: Do not select any HDD which is not in the LNVR, because it can cause permanent reboots.

5. Repeat the previous two steps with all the Logipix LNVRs of the system!

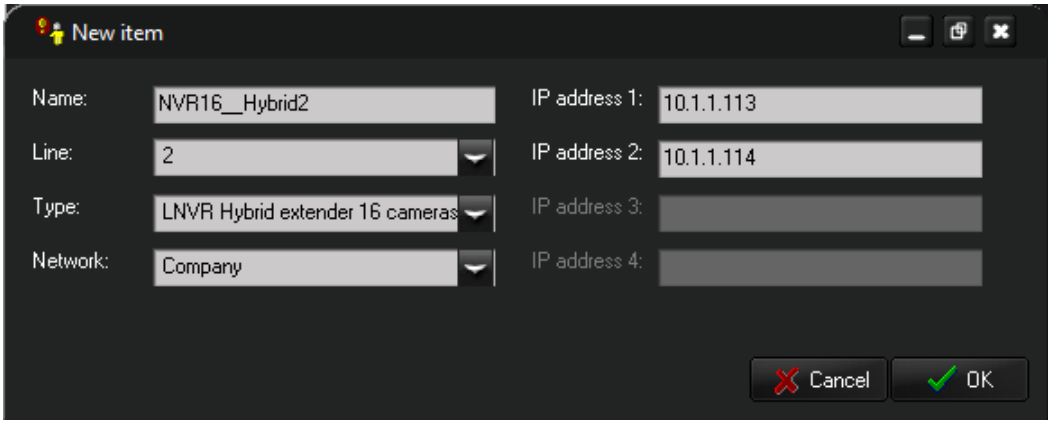
6. Right click on the LNVR in the left tree and choose **Add new logipix or hybrid**! In the popup window select **Logipix**! Enter the **Name** of the Logipix multi-megapixel camera, adjust its **IP address, Select Normal Housing** and choose **Logipix 15** from the **Type** list! Adjust the **Line** where the camera is connected! It is the 1 (Gigabit) in case of the first camera. (The second camera connects to the 2 (Gigabit), and so on...). Select **Company Network** from the drop down list and click on **OK**!



7. Repeat the previous step with all the Logipix multi-megapixel cameras of the Logipix LNVR!
8. Right click on the LNVR in the left tree and choose **Add new logipix or hybrid**! In the popup window select **Logipix**! Enter the **Name** of the Logipix PTZ camera, adjust its **IP address** select **PTZ Housing** and choose **Logipix PTZ** from the **Type** list! Adjust the **Line** where the camera is connected! Select **Normal Housing** and **Company Network** from the drop down lists and click on **OK**!

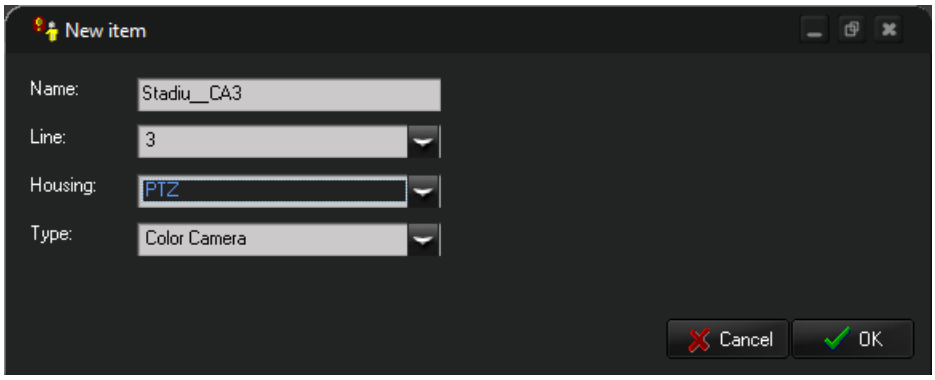


9. Repeat the previous step with all the Logipix PTZ cameras of the Logipix LNVR!
10. Right click on the LNVR in the left tree and choose **Add new logipix or hybrid**! In the popup window select **Logipix**! Enter the **Name** of the Logipix Full HD camera, adjust its **IP address** select **Normal Housing** and choose **Logipix 2mpx** from the **Type** list! Adjust the **Line** where the camera is connected! Select **Normal Housing** and **Company Network** from the drop down lists and click on **OK**!
11. Repeat the previous step with all the Logipix Full HD cameras of the Logipix LNVR!
12. Right click on the LNVR in the left tree and choose **Add new logipix or hybrid**! In the popup window select **Hybrid extender**! Enter the **Name** of the Hybrid extender and choose **LNVR Hybrid extender 16 cameras** from the **Type** list! Adjust its **IP address** (the device has 2 IP addresses) Adjust the **Line** where the Hybrid extender is connected to the LNVR! Select **Company** from the **Network** drop down list! Click on **OK**!



13. Repeat the previous step with all the Hybrid extenders of the Logipix LNVR!

14. Right click on the Hybrid Extender in the left tree and choose **Add new camera!** In the popup window enter the **Name** of the analog camera, select the physical **Line** where it is connected to the Hybrid extender, select whether it is a **Normal** or a **PTZ** camera at **Housing** and adjust the **Type** of the camera!



15. Repeat the previous step with all the analog cameras of the Hybrid extenders!

Automatic registration

There is possibility to import the devices of the system automatically. To perform this process you have to use a predefined .csv file, wherein the devices have been listed previously in a given form. The form of the .csv file is the following:

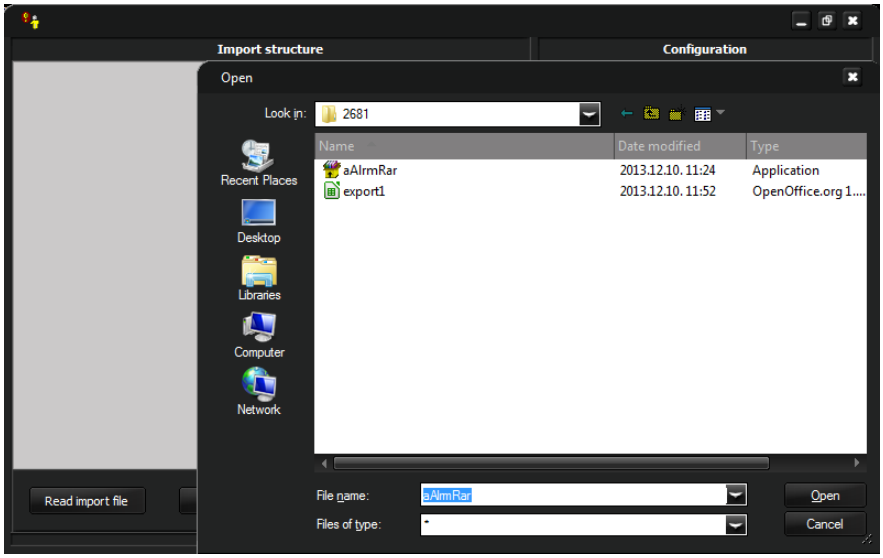
Name	Type	assign	Network/ channel	Serial	IP1	IP2	IP3	IP4	HaveDN	HaveABF	HaveSATA	HaveSound	template

The required fields are the N**ame**; **Type;** and **assign**. **IP1, IP2** (IP2: only in case of Hybrid Encoders) are strongly recommended fields. The **Name** is the device's own name. It should be a unique one in case of LNVR and Hybrid Encoder. In case of cameras, the names should be unique on every individual LNVR and Hybrid. Device **Types** are the following: **Camera15MP**, **Camera2MP**, **CameraAnalog**, **PTZ2MP**, **PTZAnalog**, **NVREnterprise, Encoder**. To assign the cameras to an NVR or a Hybrid Encoder an existing device name should be given. **Network/channel** is recommended to be given. In case of analog cameras the fields can be let empty (thus the channel assignment will be automatic on the free channels of the Hybrid Encoder), but in case of all other devices, **Company Gigabit** is the proper adjustment. **Serial** number is an optional field, it should be unique if it's given. **HaveDN**; **HaveABF**; **HaveSATA**; **HaveSound** fields are optional too and concern only for Logipix cameras. In case of Logipix 15MP cameras it is recommended to set **YES** value to the **HaveABF** fields. These parameters can be adjusted later during camera configuration, but this is a faster way to set all Logipix 15MP as cameras with Auto Back Focus module. Template is optional as well. It can be later adjusted during camera configuration.

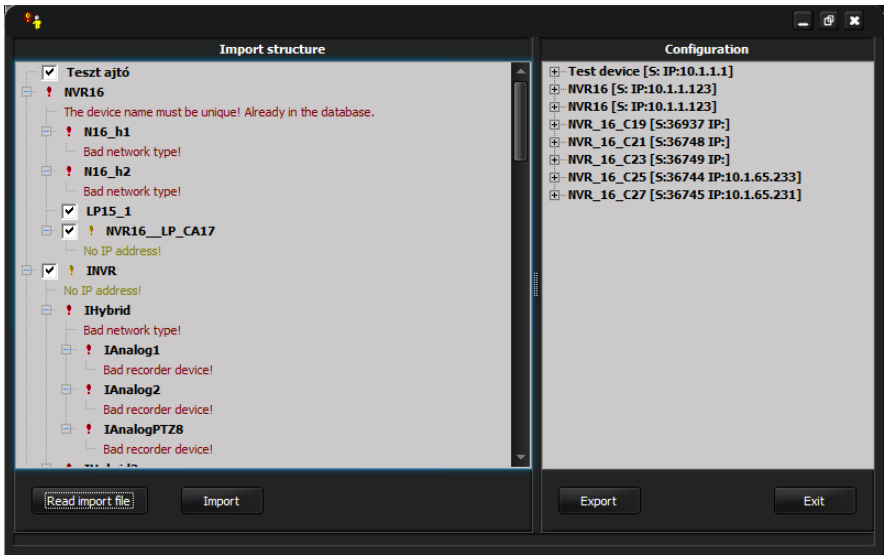
Create a .CSV file (e.g.: in Excel) with the data of the devices based on the .CSV template above!

1. Open the Control Center software!
2. Select **Camera/NVR import and assignment** in the **Video/Setup** menu!

3. Click on **Read import file** button and browse the appropriate predefined text file! Select it and click on **Open**! The software is going to build up the **Import structure** of the devices automatically. If there are some problems in the structure the program signs it with red warning messages in the proper lines. The problems can be corrected by clicking on the faulty line and give the right adjustments in the popup window.



4. After checking the structure click on Import button. The software is going to import all the devices.



Configuring the devices

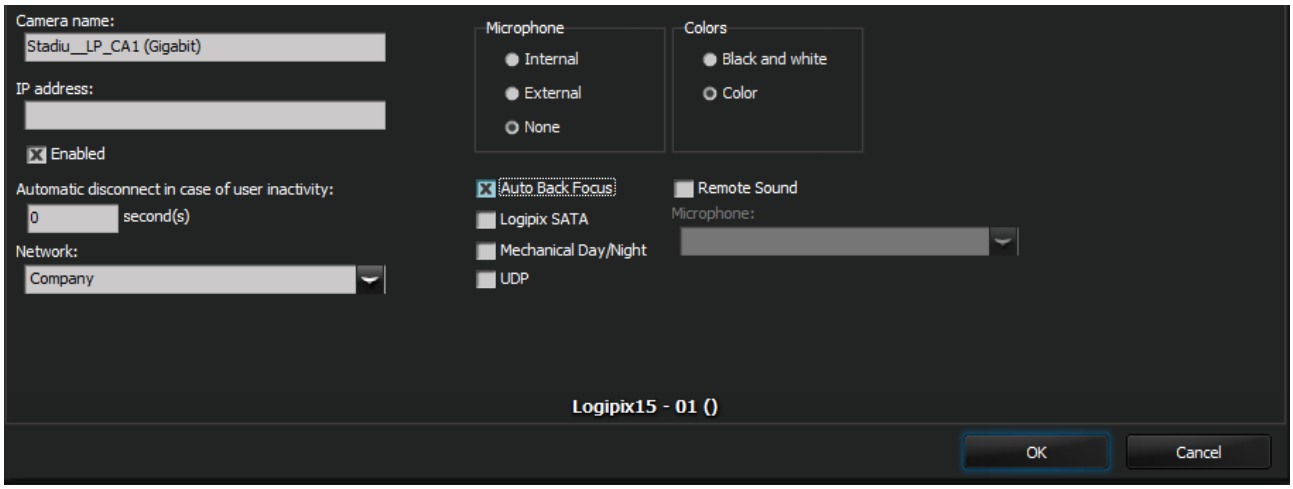
The main concept of the device configuration is to configure an individual device from each device type, then copy and paste the settings to the rest of the devices. The only exception is the ABF setting for the 15 MP cameras.

Auto Back Focus (ABF) setting

The ABF module changes the position of the sensor to find the right focus. It can be used with the 15 megapixel Logipix camera with ABF module. The ABF setting must be performed individually for all the Logipix 15MP cameras.

1. Find the desired Logipix camera on the Camera configuration form and click on its name in the tree on the left.
2. Sign the **Auto Back Focus** checkbox then click on **OK**!

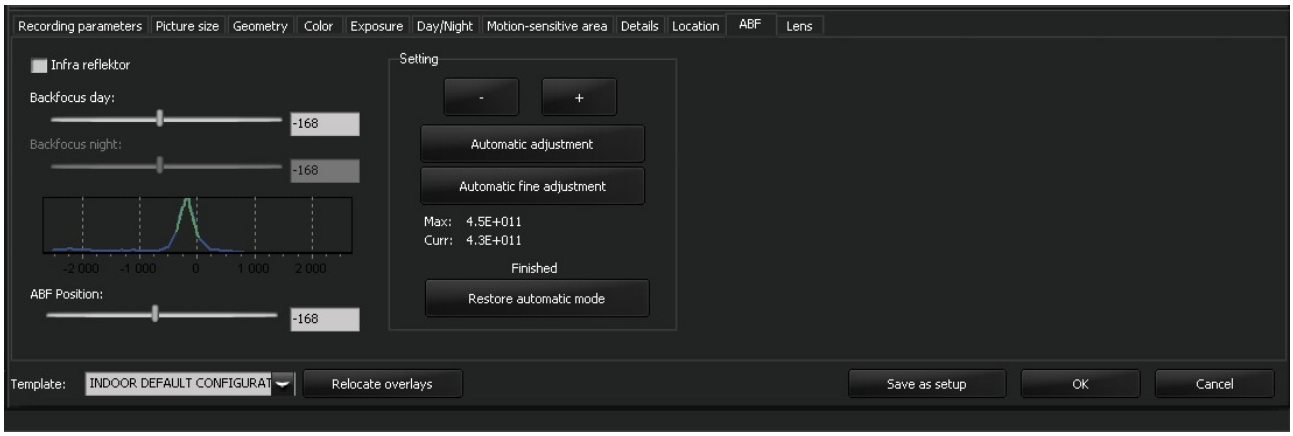
   NOTE: If the ABF function has been adjusted previously during the automatic device import, this field is already active.



3. Click on **Setting**s in the device tree then open the **ABF** tab!
4. The upper slider (**Backfocus day**) shows the default sensor position.
5. To adjust the right focus first you have to zoom in on the camera picture and find the most important area in the aspect of observation. The areas outside of the zoom area will be obscured during the focus setting.

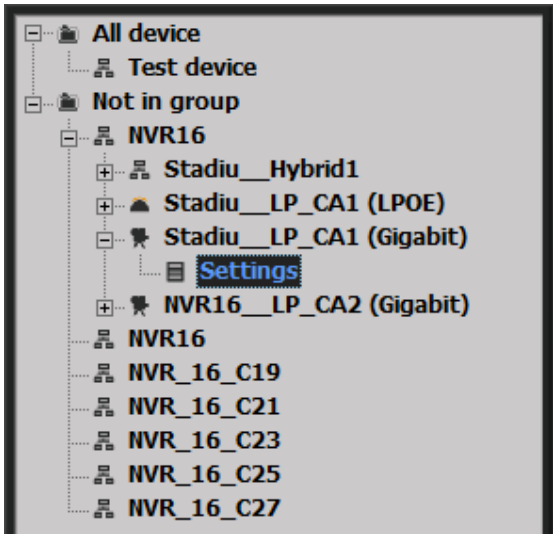
6. To find the right focus, use the **ABF Position** slider! You can adjust it manually, or you can use the **Automatic focus search**. There is a graph between the sliders, which shows the actual focus value. In case of automatic adjustment the program moves the sensor between the two end positions (from -2700 to 2700) and finds the max focus value. After that the program makes another scan around the max value in 400 steps to fine tune it.
7. If you've searched the focus manually by the slider, click on the **Automatic fine tune** button! The software will fine tune the focus automatically
8. This value is still not a saved configuration in the camera. You have to press the **OK** button to finalize it.

NOTE: If you do not save the focus value, the sensor will change back to its default position after a while.



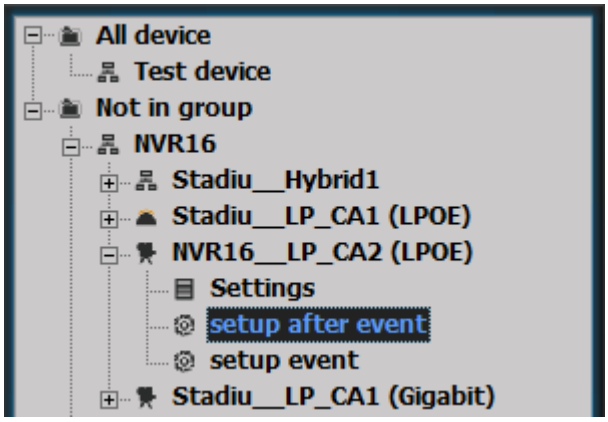
Configuring the Logipix multi-megapixel cameras

1. Click on the **Configure** icon on the main software surface!
2. Select the Logipix multi-megapixel camera in the left tree which you would like to configure! Click on the '**+**' sign near the camera name and select **Settings**!



3. Find the Template list on the settings form! Select **Stadium 15MP event** from the drop down list! Override the actual settings! The software is going to configure the multi-megapixel camera automatically for the event.
4. Press the **Save as setup** button at the bottom of the window! Right click on the created setup in the left camera tree then **Rename** it! This camera setup will operate while the Event is open.

5. Right click on the **Settings** under the configured camera in the left tree, and create a new **Setup**! Right click on it and **Rename** it!



6. If the new setup is selected, find the Template list on the settings form! Select **Stadium 15MP after event** from the drop down list! Override the actual settings! The software is going to configure the multi-megapixel camera automatically for after the event. This camera setup will operate when the Event has closed.

Configuring the Logipix Full HD cameras

1. Click on the **Configure** icon on the main software surface!
2. Select the Logipix Full HD camera in the left tree which you would like to configure! Click on the '**+**' sign near the camera name and select **Settings**!
3. Find the Template list on the settings form! Select **Stadium Full HD event** from the drop down list! Override the actual settings! The software is going to configure the Logipix Full HD camera automatically.
4. Press the **Save as setup** button at the bottom of the window! Right click on the created setup in the left camera tree then **Rename** it! This camera setup will operate while the Event is open.

5. Right click on the **Settings** under the configured camera in the left tree, and create a new **Setup**! Right click on it and **Rename** it!
6. If the new setup is selected, find the Template list on the settings form! Select **Stadium Full HD after event** from the drop down list! Override the actual settings! The software is going to configure the Logipix 2MP camera automatically for after the event. This camera setup will operate when the Event has closed.

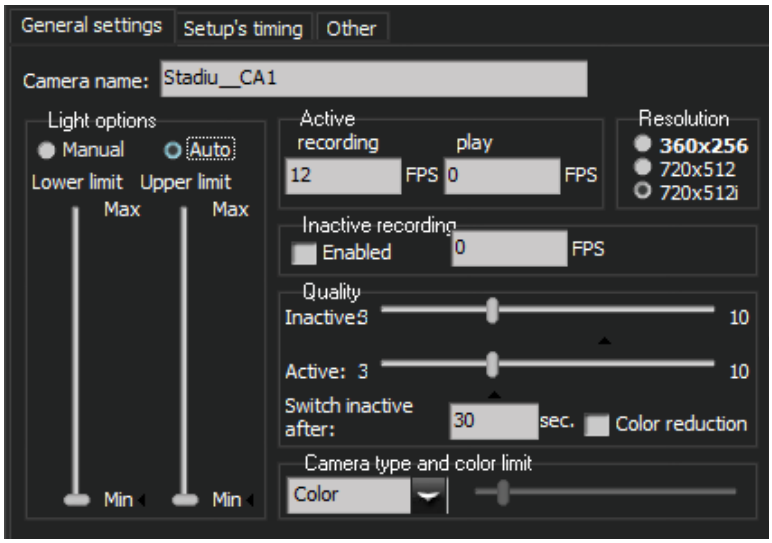
Configuring the Logipix PTZ cameras

1. Click on the **Configure** icon on the main software surface!
2. Select the Logipix PTZ camera in the left tree which you would like to configure! Click on the '**+**' sign near the camera name and select **Settings**!
3. Find the Template list on the settings form! Select **Stadium PTZ event** from the drop down list! Override the actual settings! The software is going to configure the Logipix Full HD PTZ camera automatically.
4. Press the **Save as setup** button at the bottom of the window! Right click on the created setup in the left camera tree then **Rename** it! This camera setup will operate while the Event is open.

5. Right click on the **Settings** under the configured camera in the left tree, and create a new **Setup**! Right click on it and **Rename** it!
6. If the new setup is selected, find the Template list on the settings form! Select **Stadium PTZ after event** from the drop down list! Override the actual settings! The software is going to configure the Logipix Full HD PTZ camera automatically for after the event. This camera setup will operate when the Event has closed.

Configuring the analog cameras

1. Click on the **Configure** icon on the main software surface!
2. Select the Hybrid extender in the left tree to which the analog camera is connected! Click on the '**+**' sign near the Hybrid extender! The cameras of the device appear. Click on the '**+**' sign near the camera name and select **Settings**!
3. Select **Auto** at **Light options** section! Adjust **12 FPS** for **Active recording** and **0** for **play**! Set the **Resolution!** Select **720x512i**! Adjust the quality by selecting the value 4 on the **Quality (Active)** slider!



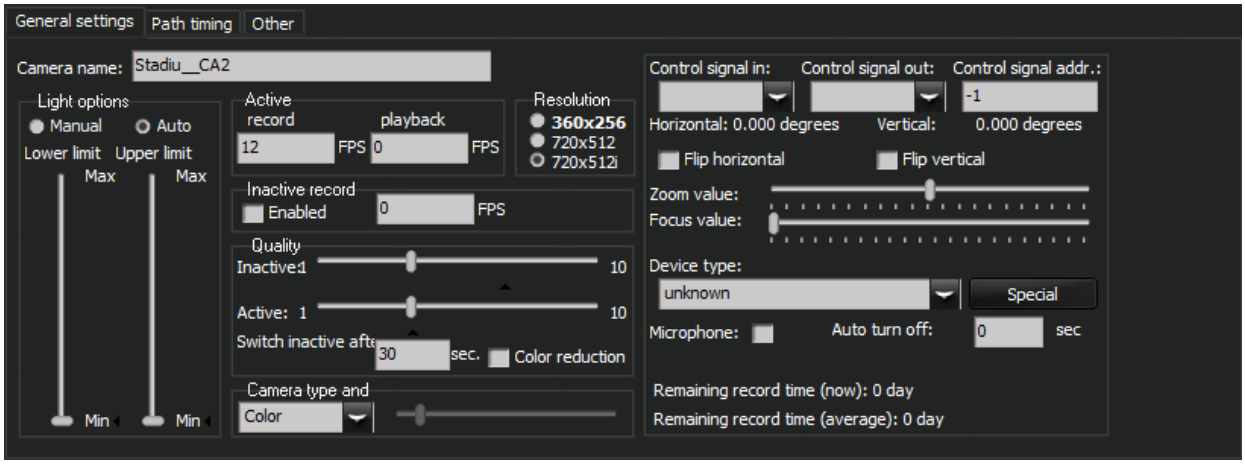
4. Press the **Save as** button at the bottom of the window! Right click on the created setup in the left camera tree then **Rename** it! This camera setup will operate while the Event is open.

5. Right click on the **Settings** under the configured camera in the left tree, and create a new **Setup**! Right click on it and **Rename** it!

6. If the new setup is selected, adjust the lower quality configuration for after the event! This camera setup will operate when the Event has closed.

Configuring the analog PTZ cameras

1. Click on the **Configure** icon on the main software surface!
2. Select the Hybrid extender in the left tree to which the analog PTZ camera is connected! Click on the '**+**' sign near the Hybrid extender! The cameras of the device appear. Click on the '**+**' sign near the camera name and select **Settings**!
3. Select **Auto** at **Light options** section! Adjust **12 FPS** for **Active recording** and **0** for **play**! Set the **Resolution!** Select **720x512i**! Adjust the quality by selecting the value 4 on the **Quality (Active)** slider!



4. Press the **Save as** button at the bottom of the window! Right click on the created setup in the left camera tree then **Rename** it! This camera setup will operate while the Event is open.

5. Right click on the **Settings** under the configured camera in the left tree, and create a new **Setup**! Right click on it and **Rename** it!
6. If the new setup is selected, adjust the lower quality configuration for after the event! This camera setup will operate when the Event has closed.

Set the rest of the cameras as camera groups

1. Change the view of the device groups! Change to device type grouping by signing the **Device type** radio button! Chose the camera type which cameras you would like to configure at once! (Logipix 15MP camera / Logipix Full HD PTZ camera / Logipix 2MP camera / analog camera / analog PTZ camera)

2. Select the previously set individual camera in the device group in the left tree and click on **Settings** with the right mouse button!

3. In the popup window, select **Copy camera settings**! The camera settings and also the camera setups are going to be copied to the clipboard.

4. Select those cameras which for you would like to copy the given camera settings and setups! The following individual camera parameters will not be copied: Name; IP address; LNVR; Motion-masks and related settings, Privacy and Exposition mask. Camera selection can be performed by the very same method as file managing in Windows OS. To select nonconsecutive cameras, hold down CTRL, and then click each item you want to select. To select a consecutive group of cameras, click the first item, hold down the SHIFT key, and then click the last item.

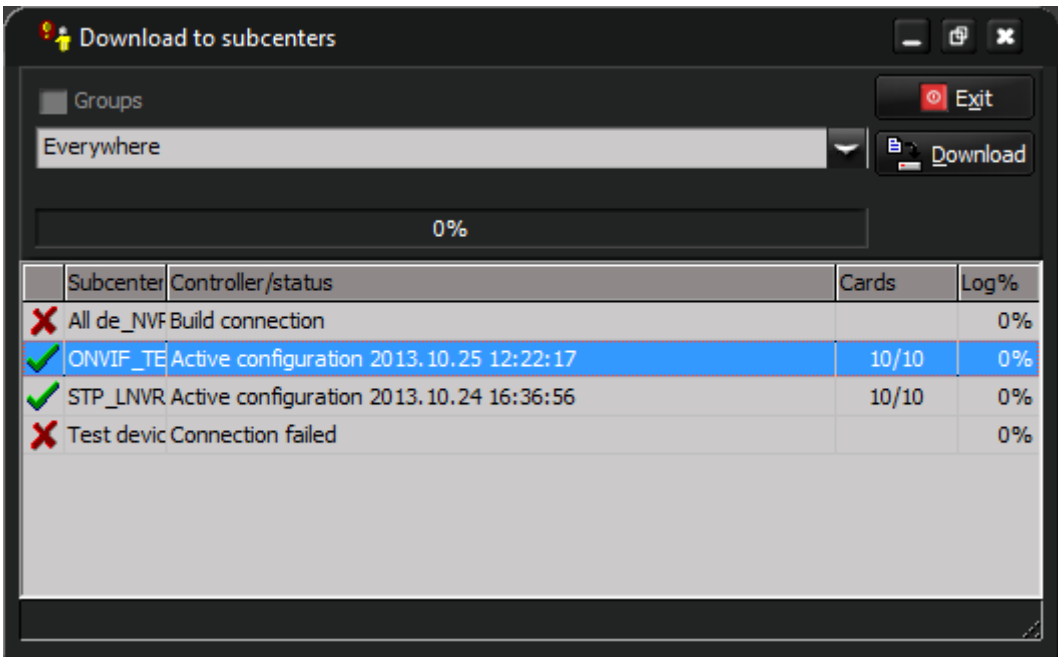
5. In case of selecting several cameras, a table is going to be displayed at the place of the camera pictures. The rows of the table contain the selected cameras and the columns of the table contain the parameters and the setups of the cameras. Identical rows (identically set cameras) and columns (identically set parameters for every cameras) of the parameters may be hidden in the table. In that case the number of the hidden rows and columns are signed. There are checkboxes before every rows and columns wherewith we can sign which parameters and setups we would like to override on which cameras. All the signed checkboxes can be deselected and reselected at once, separated for the rows and for the columns.

6. After the parameter selection has checked click on the chosen cameras by the right mouse button in the right tree, then select **Paste camera settings**!

Download settings

After you have set all the cameras, you need to upload the configuration settings to the LNVR.

- Click the “arrow” icon on the toolbar! The following popup window appears:



- You have the opportunity, to select the LNVRs individually, or you can upload the configuration to all at once.
- From the drop down list select the desired LNVR or select all by selecting “**Everywhere**”!
- The device is ready to receive the configuration if there is a green pipe beside it.
- Click on the download button!

Creating camera setup groups

1. Select **Camera setup groups** in the **Video / Stadium** menu!
2. Create a new setup group! Click on the **New** button, **Name** the group and sign it as **Default open event group**!
3. The previously created camera setups can be seen on the right side in the **Selectable** list. Assign those camera setups to the open group, which have been created for the event! Select them from the list and use the **Add** button!
4. Click on **OK**!
5. Create another new setup group! Click on the **New** button, **Name** the group and sign it as **Default closed event group**!
6. Assign those camera setups to the closed group, which have been created for after the event! Select them from the list and use the **Add** button!
7. Click on **OK**!

Creating Panorama cameras

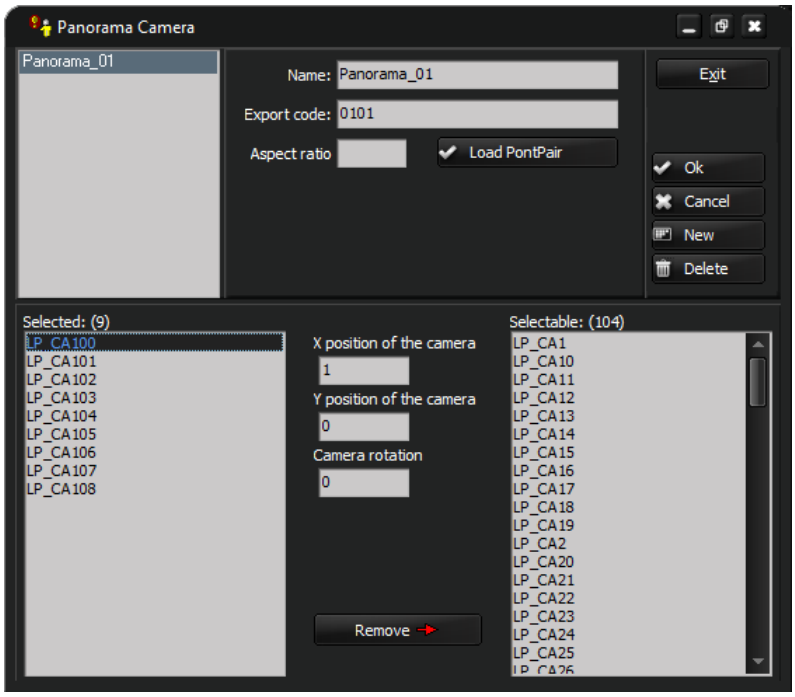
A panoramic camera is a virtual camera in the system, which is built from several normal multi-megapixel cameras by configuring their position in the panoramic picture, and stitching them together.

Defining the panorama cameras

1. Open the **Panorama camera** menu at **Video / Setup** menu! In this menu you can virtually assemble the cameras of the panorama camera.
2. Define a new Panorama camera by the **New** button!
3. Enter a **Name** and an **Export** code for the Panorama camera! (The export code can be any name that contains only letters (A-Z) and numbers (0-9) Click **OK**.
4. Assign the appropriate Logipix multi-megapixel cameras to the Panorama camera! The list of the **Selectable** cameras can be seen on the right.

Move those cameras to the list on the left (**Selected**) which form a Panorama camera picture! Use the traditional Drag & Drop method, or use the **Add** button!

5. At the **X position of the camera** field set each camera's X axis position according to their physical position in the line of the cameras! Number one is the camera that records the left side of the panoramic image.



6. Repeat steps 2-5. for all the panoramic cameras in the stadium!

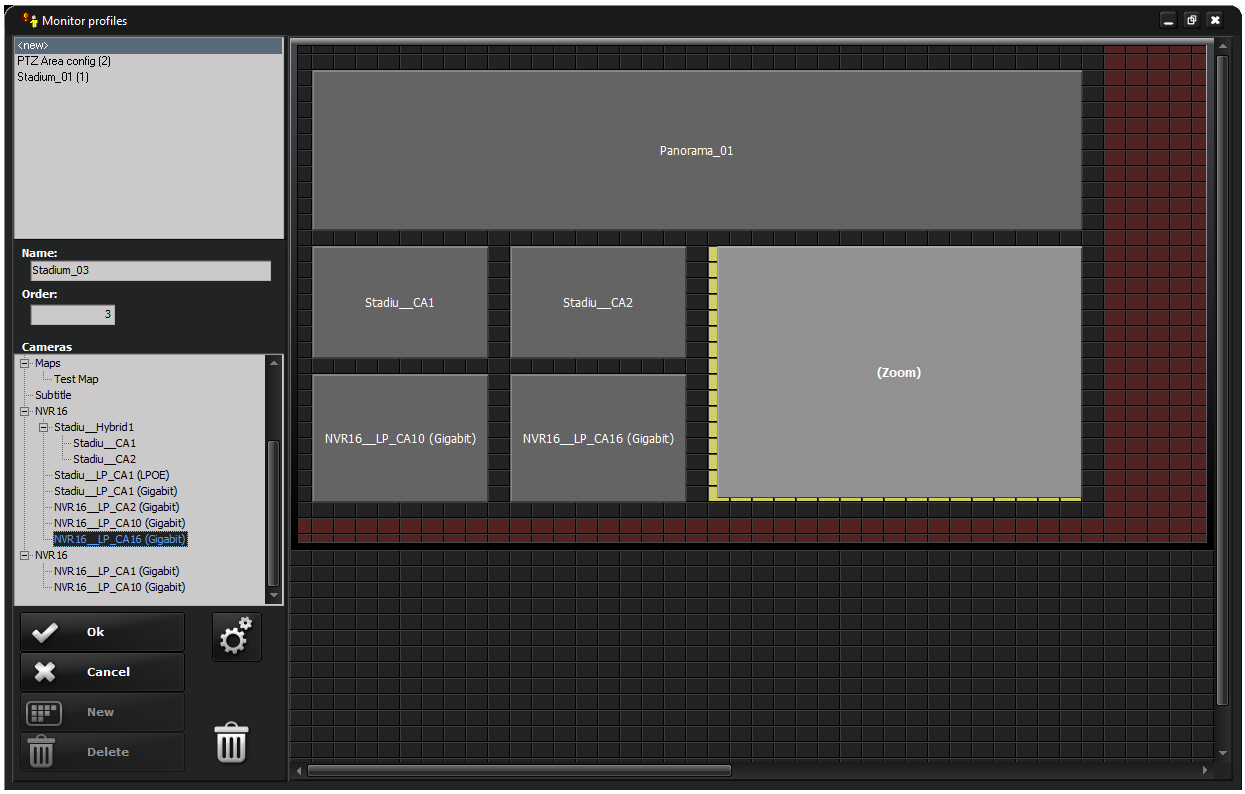
Creating Monitor Profiles

Define displaying units with the camera pictures at each workstations! These monitor profiles will contain your Panoramic images, the pictures of the PTZ cameras and the map of the stadium.

1. Click on the **Monitor profiles** icon on the main surface of the Control Center!
2. Click on **New** button and **Name** the new profile!
3. Adjust a number at **Order** field to define the order of appearance of the

profiles in the Video Monitor. If this will be the primary Monitor profile at the workstation, adjust “1”!

4. The previously registered devices can be found in the left tree. Choose the camera which you would like to place on the profile, then Drag & Drop it to the matrix! The size of the matrix is determined by the software according to the monitor resolution.



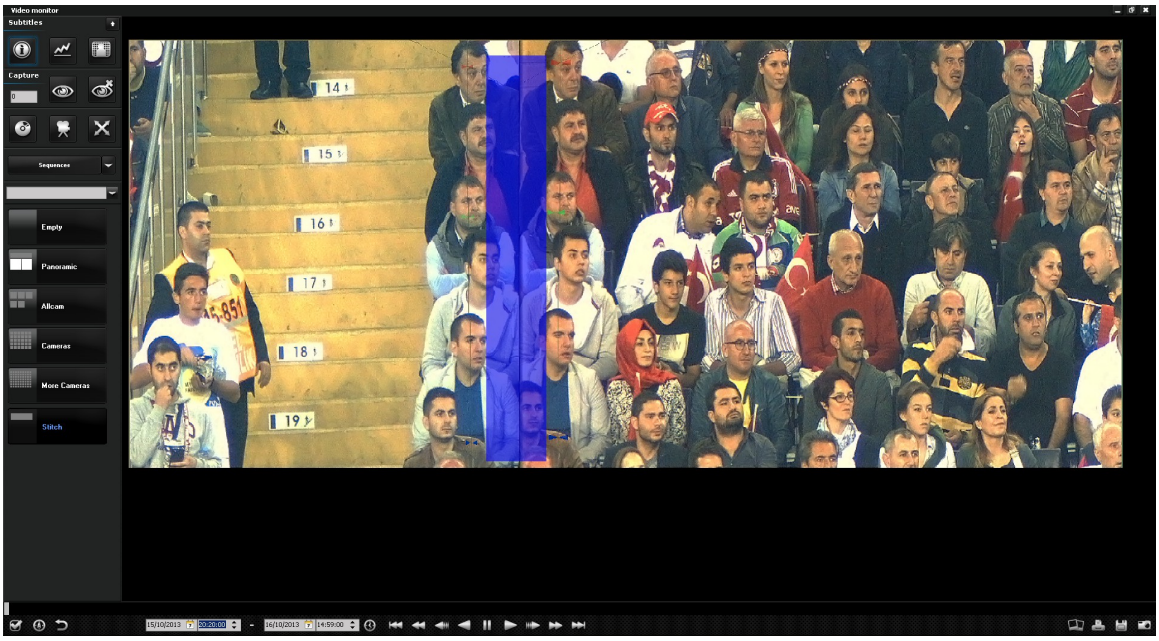
5. Click on the **Settings button**, find **Video Settings,** check **Normal** at **Video resolution** and **Default** at **Video stream**!

Stitching the images of the panorama cameras

1. The stitching can be performed only on a monitor profile, that has no zoom window on it. If necessary then create a new monitor profile for stitching.
2. Open the Video Monitor by clicking on its icon on the main surface of the

Control Center software!

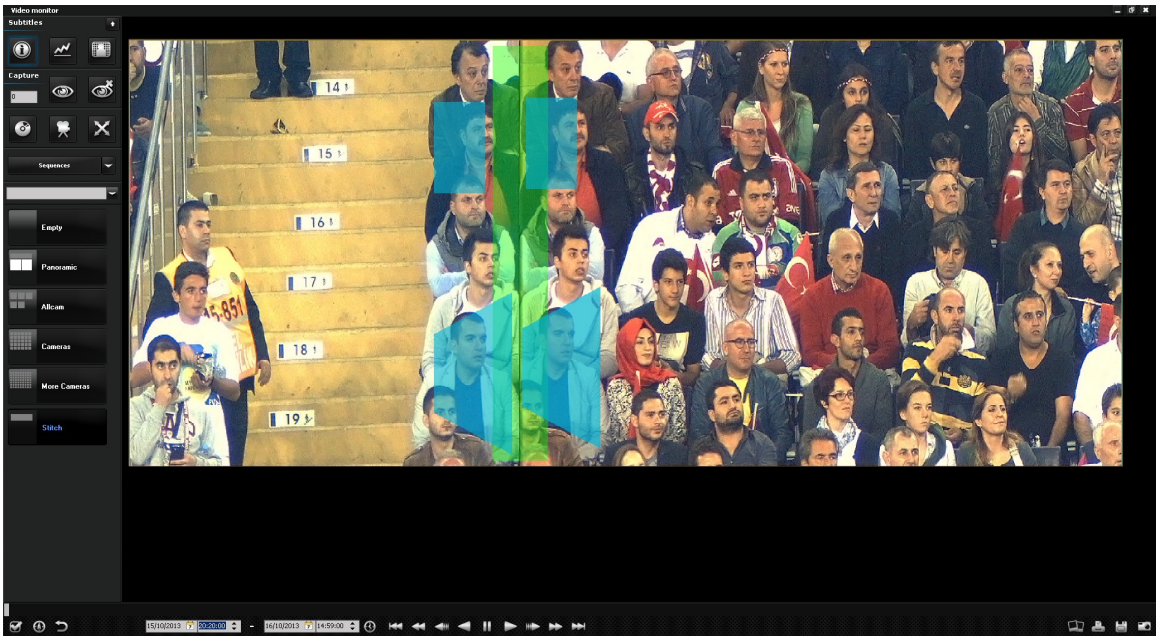
3. The previously created Monitor Profile with the Panorama camera appears on the left as a button with its name. Click on it! Now the camera pictures are shown in the Video monitor.
4. Once the connection is established, the pictures of the IP cameras which are in the common camera group can be seen side by side. To see an appropriate panorama picture you have to stitch the camera pictures so as overlapping the pictures by designating common points.
5. Press **F2** button!
6. Zoom in the camera pictures at the image borders!
7. If you move your mouse over the border of two cameras, a blue rectangle will be shown. This indicates the cameras which you are going to stitch. As you move your mouse to the following camera, the next rectangle will be highlighted. You can lock the selection by pressing and holding the **Shift** key.
8. Find common points and select them on both images by **Shift+left mouse button**! Common points are signed by the same color markers. Repeat this step a few times at the border of the images! The markers should be approximately in a straight vertical line in the image. There should be one marker close to the top image border if possible, and one close to the bottom image border.



9. Place the markers at every image border!
10. The placed markers can be relocated. Move the mouse pointer over the marker, press Shift then the middle mouse button at the desired position! The undesired markers can be deleted by **Shift+right mouse button**.
11. After you have finished the placing of the markers, press **F2**, and the program is going to stitch the camera pictures!

12. If the gradient between the images is not smooth enough, you have to set an area on both images, covered by some special points. In these areas, the difference in white balance between the cameras can be corrected.
13. Press **F2** then the key **V** to enter the white balance editor mode of the panorama picture!
14. Three different areas can be designated close to the image border. One area is at the top of the image, another is in the middle and the last can designate the bottom. As you move your mouse over therse areas, a green rectangle will be highlighted. You can lock your selection if you

hold the **Shift** button and designate the areas at the border of an image by placing at least 3 points by the **left mouse button**. Place the points on the neighboring image as well to appoint approximately the same area. You can go back to edit stitching points if you press the **N** key. If you've finished with editing, press **F2** again!

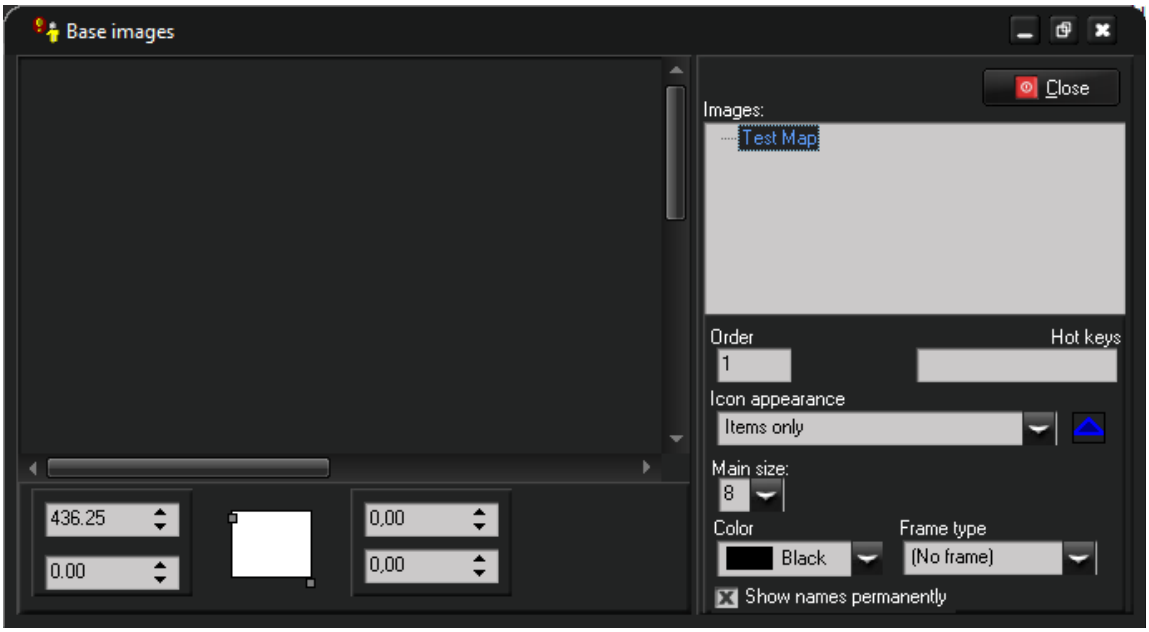


PTZ Area configuration

Logipix Full HD PTZ cameras can be controlled on the Logipix panoramic camera images in the **Video Monitor** by selecting a desired area. To perform this action we have to configure special PTZ guidance points on the Logipix camera image and on the uploaded map. Based on these guidance points the Logipix Full HD PTZ cameras can find the appointed area.

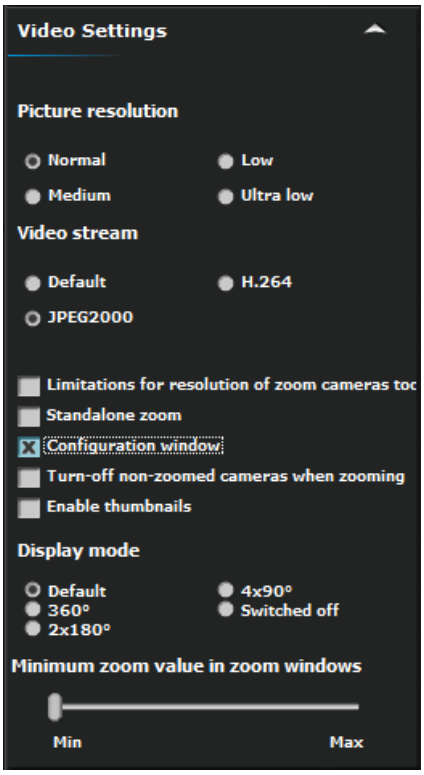
Creating the map

1. Click on **Map & Event** menu and open **Setup / Maps**!
2. Right click on the Images section on the right and choose **New base image**!
3. Name the Map and browse the appropriate image in the popup window!



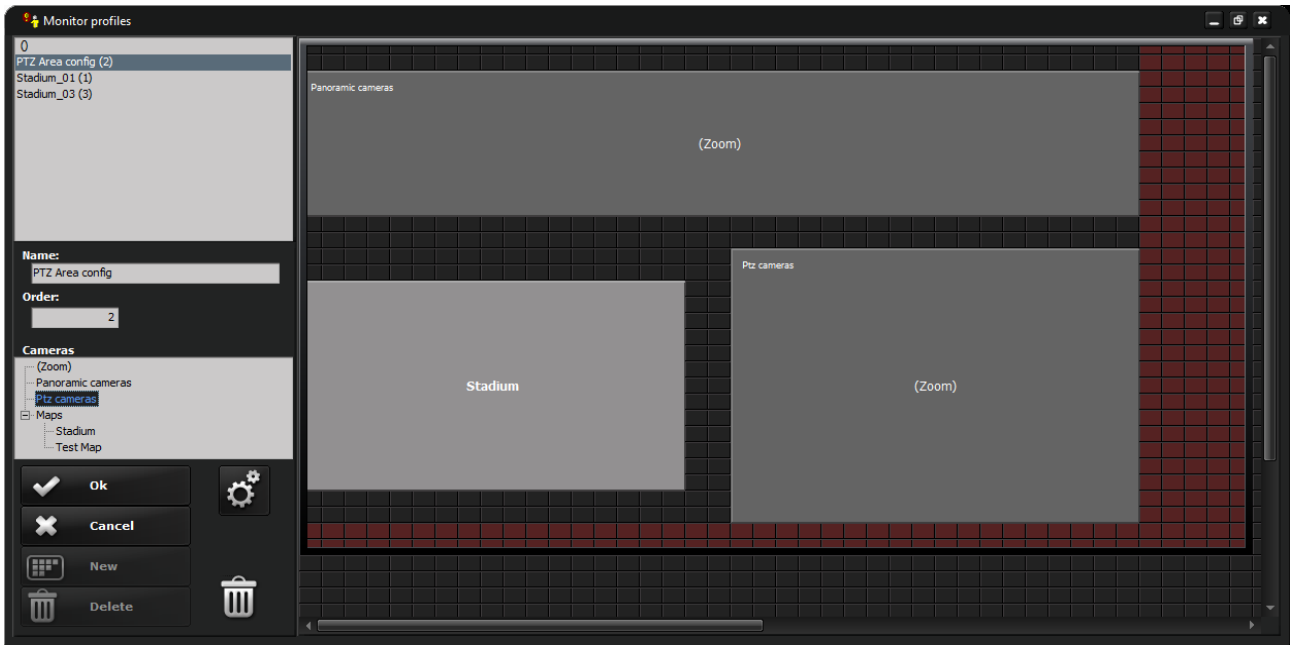
Creating a configuration monitor profile

1. To configure PTZ Area function, create a new **Monitor Profile,** marked as **Configuration Window,** with two zoom windows! This profile will be visible only in the **PTZ Area Configuration** window.
2. Click on the **Monitor profiles** icon on the main surface of the Control Center!
3. Click on **New** button and **Name** the new profile!
4. Click on the **Settings button**, find **Video Settings** and check the field beside **Configuration window**!



4. Place two Zoom windows on the monitor matrix and place the map as well! Designate the panoramic camera! Select Panoramic cameras from the left tree then Drag & Drop it to the Zoom window of the panorama camera. Perform the same method for the Zoom window of the PTZ

camera, selecting PTZ cameras from the left tree!



5. Click on **OK**, then close the Monitor Profiles window!

Configuring PTZ Area

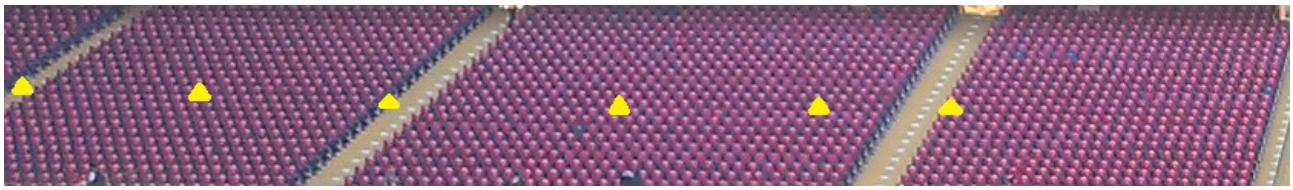
1. Click on **Video** menu and open **Setup / PTZ Area Config**!
2. Choose the previously created profile, which you can find in the lower left corner!
3. On the **PTZ Area Config** window select the appropriate panoramic camera from the left **Camera** tree by a double click. The same method has to be performed with the configurable PTZ camera as well.
4. Three buttons can be seen on the images of the panoramic camera and on the map. **N** is for creating a new Guidance point, **D** is for deleting an existing point and **M** is for modifying a created Guidance point. You can also find the **M** icon on the PTZ image.
5. To create a new Guidance point activate the N button on the panoramic image by clicking on the icon. The active icon turns to red.

6. Place a point on the image at a well recognizable object on the picture by a single left click! You can move the point by another single click.
7. Find the same point on the map as well and designate it by a single left click!
8. Now move the crosshair of the PTZ exactly to the same point which you've designated before on the panoramic image! Use the left mouse button to move the crosshair!
9. If you find the same points on the panoramic image, on the PTZ image and on the map as well, click on the **Save** button or use the **Ctrl+S** hotkey! After that the point turns to yellow. If you do not want to save the points, click on **Cancel**!
10. To delete a Guidance point, activate the **D** icon on the panoramic image, select the point you want to delete by clicking on it (the point turns to pink). If you click between the points the program will choose the closest point to the place of the clicking. You can change between the points, using the arrow icons in the lower right corner of the image. Left click again on the point to delete it! After deleting, click on the **Save** button!
11. To modify a point, activate the **M** icon on the panoramic image and select the point you want to modify by clicking on it! If you click between the points the program will choose the closest point to the place of the clicking. After you have selected the point you can replace it by single left clicks. You can change between the points, using the arrow icons in the lower right corner of the image. After modifying, click on the **Save** button!
12. If you have created, modified or deleted a point accidentally, you can use the **ESC** key to undo your last action.
13. Create at least six point-pairs with this method for each Logipix PTZ camera. Try to create the points forming triangle shapes (place them as they would be the apexes of triangles), and avoid to place all of them on one common line. More **Reference points** mean more accuracy.

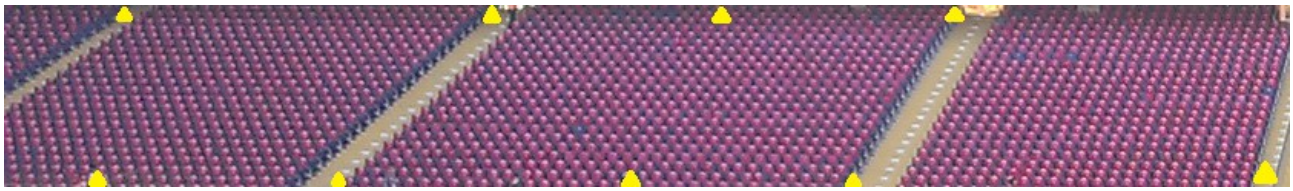
14. Activating the **M** icon on the PTZ image, you can modify the position of the crosshair on the PTZ, namely you can choose to assign the actual deignated point of the panoramic image/map to the center or any corner of the PTZ image.

15. On the left side of the window you can see the already assigned PTZ cameras to the actual panoramic camera.

How not to create reference points:



How to create reference points properly:



System usage

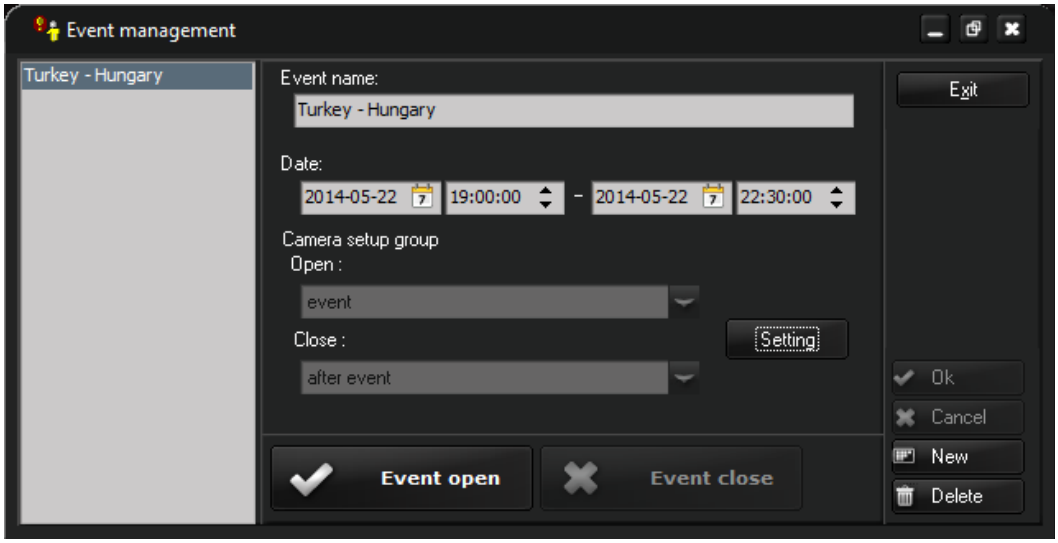
This part of the document gives information about the usage of the **Control Center** software, which performs complex supervision tasks of the Logipix Stadium Video Surveillance System.

Start the **Control Center** software clicking on its icon on the desktop!

The Event

An event must be created and start (open) for every football game (or any other event) in the stadium. The LNVR records the video stream with different camera parameters during the event and after the event. If the event is open, recordings can not be downloaded, unless they are marked as urgent downloads. Otherwise downloading is performed after the event has closed.

- Open the **Event management** form! You can find it in the **Video / Stadium** menu.
- Create a new **Event** by the **New** button!
- Name it in the **Event name** field!
- Enter the **Date** of the event! (This is only administrative information)
- Select the camera setups for the event (**Open**) and for after the event (**Close**)! The previously set default groups appears automatically in the fields. If you want to change them, click on **Setting** and perform the change in the popup window!
- Click **Event open** button to open the event!
- To close the event use the **Event close** button!



- **Note**: The events won't open and close automatically at the time written in the corresponding fields, you need to open and close them manually before and after every event!

Controlling the Monitor Profile

Watching live pictures

1. Open the **Video Monitor**! Click on its icon on the main surface of the Control Center software!

At every **Video Monitor** launch or profile change the connecting information are shown at the place of the camera pictures. Steps of the connection procedure can be seen textually, and the camera name appears in between round brackets. The green stripe below shows the course of the connection. If the connection fails, then the stripe turns to red.

2. The previously created **Monitor Profile** is going to appear on the **Video Monitor** which has been marked as the first in the order of the **Monitor profiles**.
3. To change between the **Monitor Profiles** click on their buttons, which can be found on the left section of the Video Monitor window.

Watching the archive

Archive video streams of all the cameras can be played back during the event and also after the event has closed.

There are two ways to get the archive on the **Video Monitor**.

The first:

- Select those cameras on the **Video Monitor** which from you would like to get the archives!
- Pause the video stream, then click on the **Play backwards** icon to play reverse the archive from the actual time!
- Use the controller icons to navigate the archive playback.

	Jump to the beginning
	Play backward with higher speed: Pushing it once the playback starts backward at double speed. For other presses it increases the speed to 4x and after 8x, till 16x. After reaching the maximum speed for another press the record is going to be played at double speed.
	One frame back
	Play backward (normal speed)
	Pause
	Play forward (normal speed)
	One frame forward
	Play forward with higher speed: Pushing it once the playback starts forward at double speed. For other presses it increases the speed to 4x and after 8x, till 16x. After reaching the maximum speed for another press the record is going to be played at double speed.
	Jump to the end

To change back to live mode, click on **Live video** button!

The second:

- Set the time interval of the desired archive period by the date and time fields at the bottom of the window!
- Move the mouse pointer over the desired camera picture(s) and select them by clicking the little icon in the upper left corner of the picture! The border becomes blue and the little icon can be seen if a picture is selected.

Click on the **Archive video** button on the left of the **Video Monitor**! Now you can see the archive recordings of the adjusted period.

- You can change the playback speed and direction, you can jump frame by frame or you can pause the picture during the playback by the video control buttons in the lower middle of the window. You can see a table of the icons on the previous page.

You can find a button at the bottom of the window for selecting and deselecting all the cameras.

If you would like to play back only the last ten minutes of the recordings, then click on **Auto select archive interval** button and start the archive playback!

If you select **Backwards playback** button then the recordings are going to be played back reverse from the actual time when you are querying archive recordings.

To change back to live mode, click on **Live video** button!

Controlling the Logipix Full HD PTZ

Controlling on the PTZ camera image

A unique solution has been developed for managing the PTZ cameras, whereby the camera is movable remotely by the mouse. If we click on the image of the camera, then it turns, so as the given point will be the center of the picture. You can zoom by scrolling or using the scrollbar at the side of the image. The image can be dragged and swiped by holding the left mouse button and moving the mouse.

Controlling on the panoramic image

You can select a Logipix PTZ camera that you want to control by moving your mouse pointer on the Logipix panoramic image. Click the pin icon in the lower right corner of the PTZ camera picture.

Move your mouse pointer over the panoramic camera picture and hold the left mouse button at least half a second (500ms) and after that draw around the desired area. The selected PTZ is going to turn and zoom in according to the marked image section. The image can be dragged and swiped by holding the left mouse button and moving the mouse.

Controlling on the map

Move your mouse pointer over the map and click on an area! The selected PTZ is going to turn exactly to the marked image section.

Saving pictures

1. Select the camera(s) which from you would like to save a still image or images on the **Video Monitor**!
2. Pause the video stream!
3. Find the desired image! Use the video control icons!
4. If several images are selected at once, they are going to be saved individually.
5. Click on the **Save as picture** icon!

6. Choose the destination path of the files in the pop-up window!
7. **Name** the file!
8. Click on **Save** button!

Printing pictures

1. Select the camera(s) which from you would like to print a still image or images on the **Video Monitor**!
2. Pause the video stream!
3. Find the desired image! Use the video control icons!
4. If several images are selected at once, they are going to be printed individually.
5. Click on the **Print** icon!
6. Choose the destination path of the files in the pop-up window!
7. The image(s) are going to be printed by the default printer.

Saving the archive

1. The adjusted archive period can be downloaded from the selected cameras.
2. Set the time interval of the desired archive period by the date and time fields at the bottom of the window!
3. Move the mouse pointer over the desired camera picture(s) and select them!
4. Click on the **Archive video** button on the left of the **Video Monitor**! Now you can see the archive recordings of the adjusted period.
5. If several cameras have been selected at once, the downloaded videos are going to be merged into a video matrix. (That means one file will contain the videos of all cameras)
6. Click on the **Save selected** period icon!
7. Name the downloaded file in the popup window!

8. Click on **OK** button! The download is going to be added to the download list. The ongoing download file statuses can be checked in the **Download manager**. Click on the **Download manager** icon on the main surface of the **Control Center** software to check the status!
9. The files are going to be downloaded to the default download container.

Using the LPlayer to watch .scv files

LPlayer has been developed to play the downloaded video streams, saved in Logipix Video Surveillance System.

LPlayer is a simple, easy to use software to play the saved video files of the surveillance system. The video streams can be played forward or backward at different speeds and they can be stepped frame by frame. The software is able to display sixteen camera pictures at once. Additional video content information can be shown as well. The images of the panoramic picture can be restitched and the white balance correction can be readjusted if necessary.

Installation of the LPlayer

1. Put the installation CD in the client computer!
2. Open **Utils/STP/LPlayer** folder and start **LPlayerRar.exe**!
3. Browse the installation folder then click on **Install**!
4. You can find **LPlayer.exe** in the folder where you have installed the software.

Associate .SCV files

1. Start the software by LPlayer.exe!
2. Click on **Settings** icon!
3. Find the following icon:
4. Press this button to associate all the .SCV files with the LPlayer. After this LPlayer will open this kind of files.
5. To open an .scv file, browse it on your computer then double click on the file name! The software is going to open the file.

Open a file from the software

To open an .SCV file to be played, click on the **Browse** icon.

- In the popup window you can find the right folder of the desired .SCV file. If you have found the folder, double click on the file or use the **Open** button, and the player is going to display the video stream immediately.

Saving pictures

1. Click on **Settings** icon!
2. The camera screen can be saved by the **Save as image** button.

Printing pictures

1. Click on **Settings** icon!
2. The camera screen can be printed by the **Print** button.

Panorama images

Also panoramic images can be played back by the **LPlayer**. The images can be restitched and the white balance differences can be corrected as well if necessary. Only those images can be restitched which have been downloaded originally as panoramic images. Standard multi-cam .scv files cannot be stitched to panoramic images.

<u>Restitching the panoramic picture</u>

1. Press **F2** button!
2. Zoom in the camera pictures at the image borders!
3. Find common points and select them on both images by **Shift+left** mouse button! Common points are signed by the same color markers. Repeat this step a few times at the border of the images! The markers should be approximately in a straight vertical line in the image.

4. Place the markers at every image border!
5. The placed markers can be relocated. Move the mouse pointer over the marker, press **Shift** then the middle mouse button at the desired position! The undesired markers can be deleted by **Shift+right mouse button**.
6. After you have finished the placing of the markers, press **F2**, and the program is going to stitch the camera pictures!

White balance

1. If the gradient between the images is not smooth enough, you have to set an area on both images, covered by some special points. In these areas, the difference in white balance between the cameras can be corrected.
2. Press **F2** then the key **V** to enter the white balance editor mode of the panorama picture!
3. Three different areas can be designated close to the image border. One area is at the top of the image, another is in the middle and the last can designate the bottom. Hold the **Shift** button and designate the areas at the border of an image by placing at least 3 points by the left mouse button. Place the points on the neighboring image as well to appoint approximately the same area. You can go back to edit stitching points if you press the **N** key. If you've finished with editing, press **F2** again!